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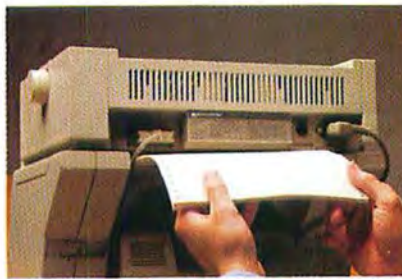
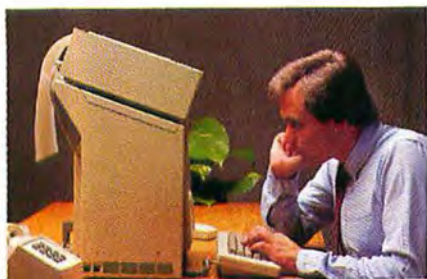
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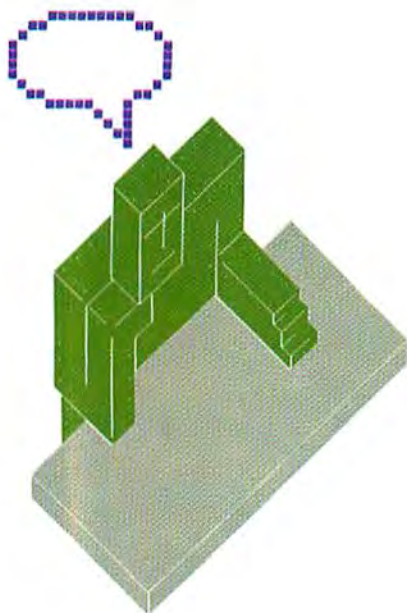
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David Bishop, cover, 39; John Hersey, 30-33; The Image Bank, 62-63; Ed Kasbi, 124-131; George Steinmetz, 9, 15, 51, 148-154; Mick Wiggins, 79-84.



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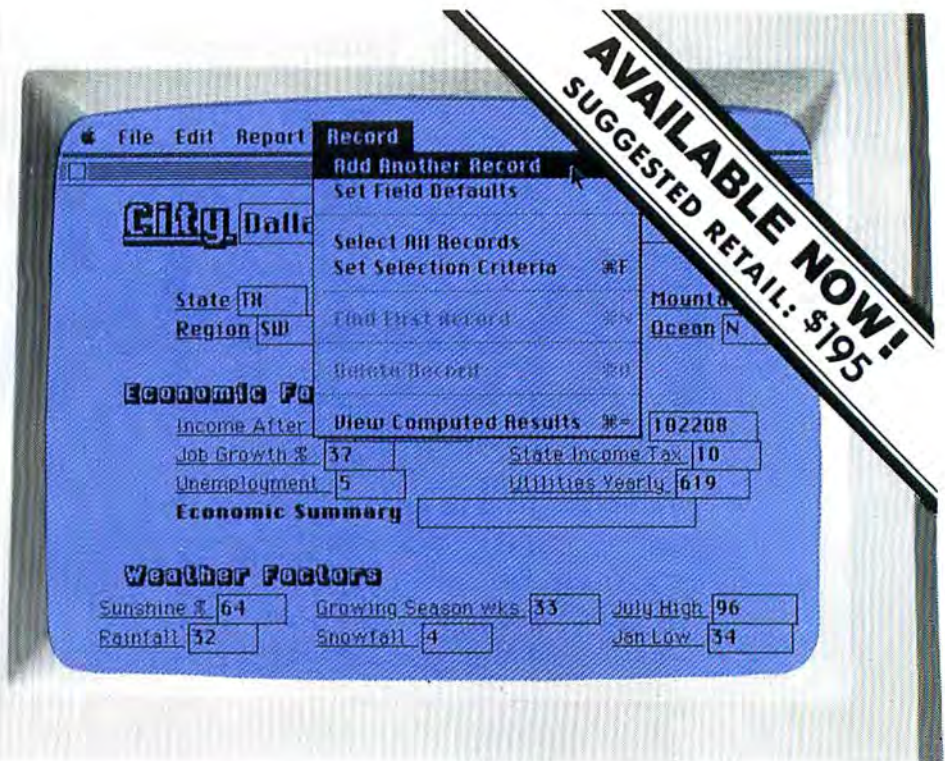
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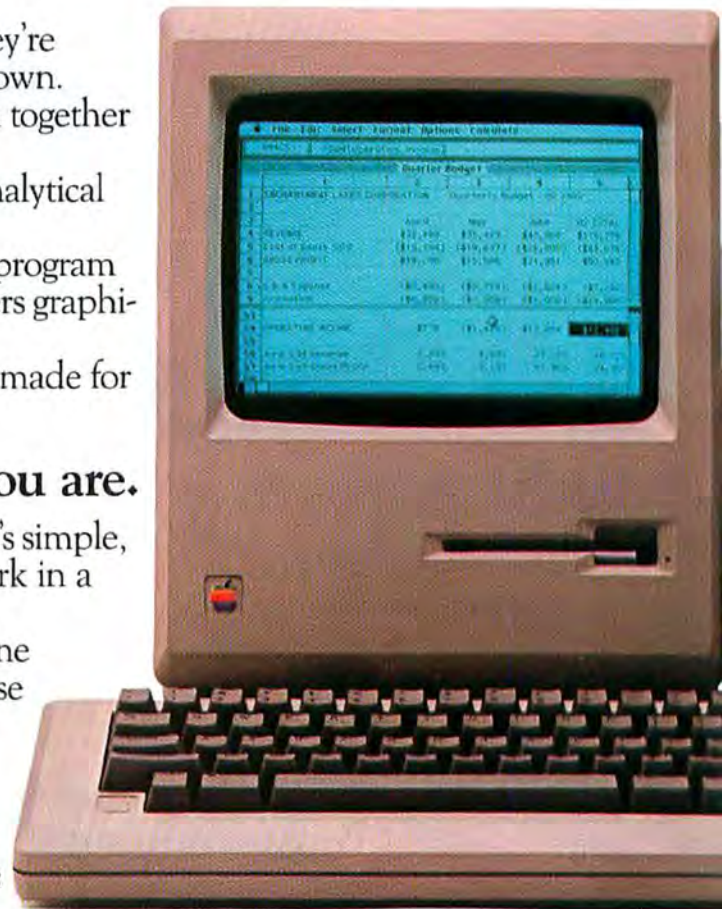
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The Price of Pioneering

On the wild and woolly frontier of personal computing, someone has to take the first steps



If you're among the original Macintosh owners, you've had to pay more to get less. But put into the proper perspective, this sad fact isn't sinister or unusual—it's just the price of pioneering.

If you stood in line to pick a 128K Mac from Apple's first crop last January for \$2495, you may feel somewhat bitter to see the machines now advertised for under \$1895. And spending an additional \$495 for a second disk drive, \$550 for a printer, and yet another \$500 for software doesn't soften the blow to your pocketbook or your ego. Now Apple wants you to pay \$995 to upgrade your Mac to a 512K "Fat Mac." At this rate, bringing up your Mac is probably more costly than keeping your car running.

Of course, the Fat Mac should have been introduced in the first place instead of the original model. All the powerful programs written for future Macs will require more than 128K of memory. A glance into the IBM PC world shows what your initial Mac investment could have bought for the same amount of money and considerably less aggravation and pa-

tience. Somehow it doesn't seem fair. But the Macintosh is still a great machine that is getting better all the time. A year from now, a lot of PC owners will probably wish they had a Macintosh.

To a Macintosh pioneer, it may be frustrating to see the benefits reaped by people who waited six months to a year before buying a Mac. But it always takes time for computer products, which are based on constantly evolving technology, to become cost-effective. The first hand-held calculators cost several hundred dollars and weren't nearly as sophisticated as today's \$10 models.

The original personal computer pioneers built their own computers from kits and programmed them by flipping two rows of switches on and off. They paid \$1000 for a mere 8K of memory, which had to be soldered onto a circuit board. Supporting a personal computer habit from 1975 to the present must have cost those avid users quite a bundle. Their basements must be full of old Altairs, IMSAIs, Apple IIs, Commodore PETs, Vector Graphics, and TRS-80s. In 1975 and 1976, thousands of surplus teletype machines were purchased by

personal computer hobbyists, because these machines combined mass storage (paper tape), keyboard input, and hard-copy printout at a cost of about \$1500. These days, I can't imagine any personal computer owner resorting to a teletype, but the machines must be languishing somewhere.

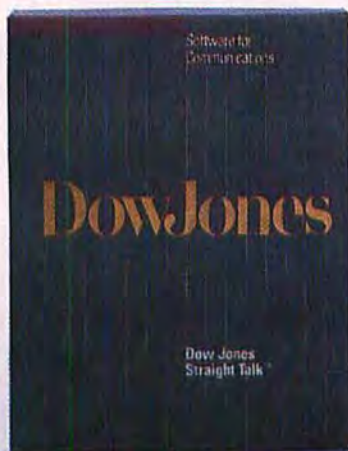
Deciding when to get into the personal computer game can prove expensive regardless of the brand you buy. For instance, I recently talked to a Compaq owner who said the price of her system had dropped \$1000 in the last year.

You have to give technology a chance to catch up with itself. Apple Computer claims that it is paying about \$30 per 256K memory chip compared to the \$3 it costs them for the 64K chips in a 128K "Slim" Mac. If this is true, the memory chips in the 512K upgrade cost Apple \$480 per system. Include the cost of a new circuit board as well as the logistics of making these machines available through wholesale and retail distribution channels, and Apple clearly isn't making much on this deal.

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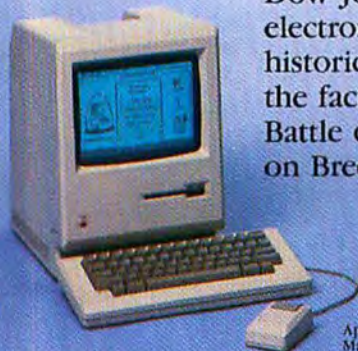


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Unfortunately, there isn't an alternative way to upgrade your Mac. If Apple could franchise a network of factory shops where the upgrade could be performed for the cost of parts and labor, how many of you would be willing to go to the trouble of shipping your Macs in for remodeling? It would probably be worth the wait and the inconvenience.

It's always good policy for a computer company to pay special attention to pioneers. A computer system's original buyers can influence future purchases in the business community; at the very least, they report their experiences with a new computer to their friends. Mac pioneers will determine the future course of the Macintosh by the software they buy and endorse. When the Mac user base reaches 250,000, these enthusiasts will set the tone for the next million users.



The official Macworld Pioneer certificate is for the first 50,000 Macintosh owners.

It's a shame that Mac pioneers have to pay the cost of building new roads. However, there are many rewards. While others wait for the prices to drop or the technology to improve, the pioneers are becoming more productive and creative than they could have been if they'd watched and waited.

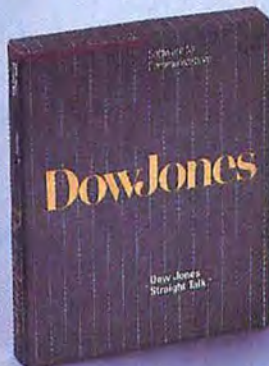
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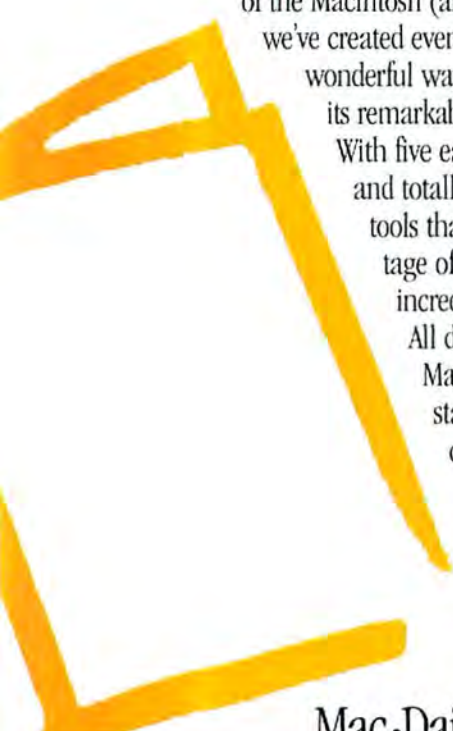


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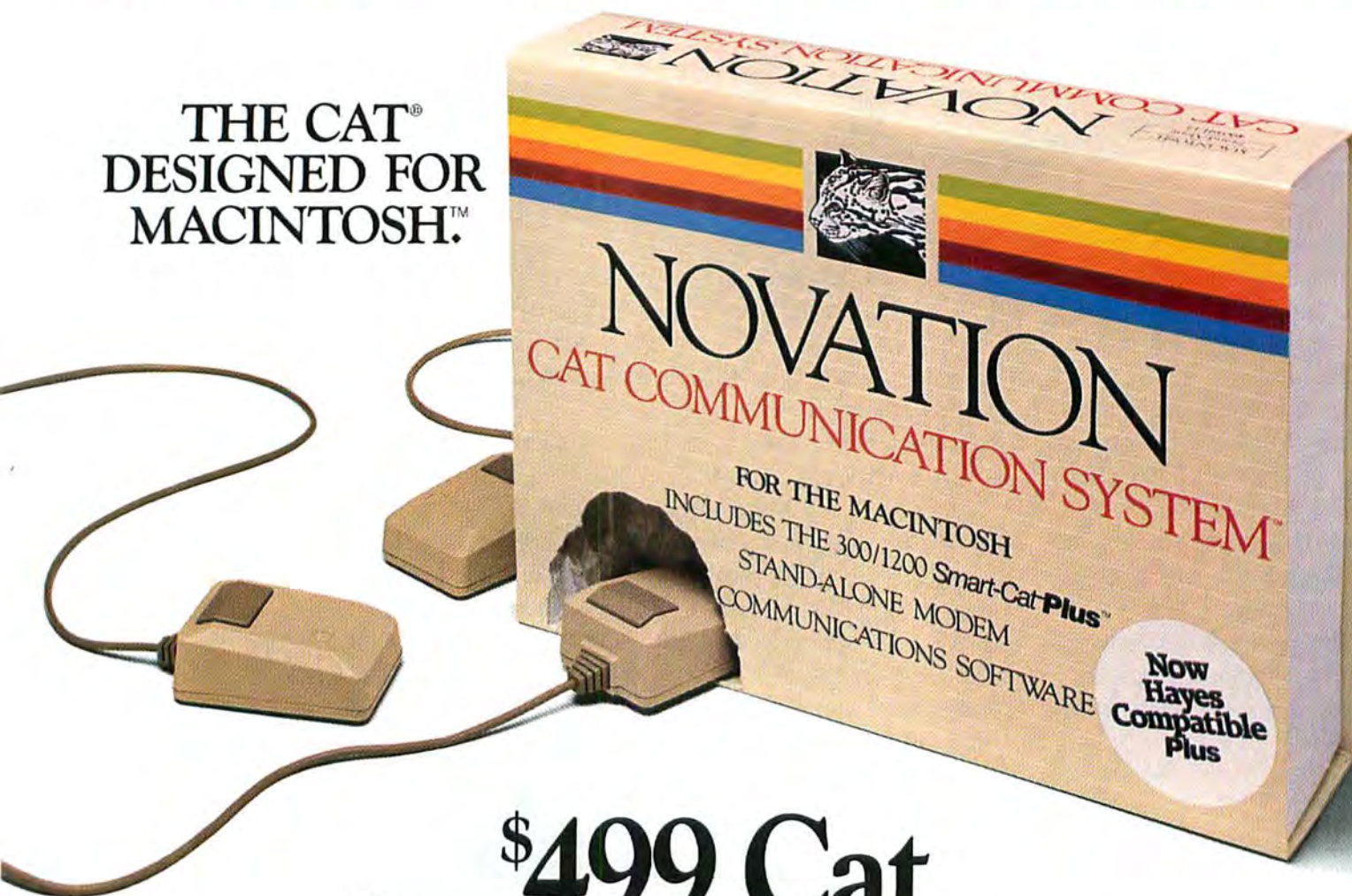
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The Whole-Brain Machine

*The Macintosh puts all your
brainpower to work*



A friend recently remarked that the Macintosh is a "right-brain computer." I argued that the actual "brain" of any computer, the microprocessor, operates in the linear, sequential manner that is associated with the left half of the human brain. To convince me, she lent me her Mac for a while. And after just a few minutes of playing with it, I had to admit that my friend had a point. The Mac's right-brain capabilities make it a breakthrough in the computer industry.

Brain Research in a Nutshell

If you missed the pop-science coverage of the right and left hemispheres of the brain, here's a quick recap. Scientists have known for centuries that the major part of the human brain, the cerebrum, is divided into two equal, almost identical, parts. Since the late 1800s, researchers have known that verbal capabilities are located primarily in the cerebrum's left hemisphere, but were uncertain of the capabilities of the right hemisphere. Because language is extremely important in our culture, the left hemi-

sphere was long considered to be "dominant"—even superior—to its silent partner.

In the past two decades, the theory that the brain is dominated by the left hemisphere has been replaced by a theory that the right and left hemispheres are equally talented partners. The left hemisphere does in fact specialize in processing language, but that's only one of its capabilities. The left hemisphere processes information by recognizing the parts that make up a whole. It functions primarily in a linear, sequential manner, moving from one point to the next—in other words, analytically. The analytical method of processing information is particularly effective for recognizing and creating linguistic and mathematical symbols.

While the left hemisphere separates the parts that constitute a whole, the right hemisphere synthesizes, combining parts to create new wholes. It seeks and constructs patterns and recognizes relationships between separate parts. Unlike the left hemisphere, the right hemisphere does not operate sequentially. Like a kaleidoscope, it simultaneously combines a variety of parts to create a rich array of patterns. The right brain seems to be responsible for most of our "creative" activity.

Of Minds and Machines

Just as scientists long failed to recognize the importance of visual thought, many people haven't realized the visual potential of computers. Until now, computers have been used principally to analyze numbers and manipulate text for applications such as spreadsheet calculation, word processing, and data base management. Only charts, graphs, and games have taken advantage of computer graphics. But the Macintosh puts the computer's visual capabilities to work. Its visual orientation, unlike the linguistic and mathematical orientation of most computers, allows people to solve problems in a new way and makes computing especially accessible to beginners. The Mac's visual component isn't merely a matter of desktops and icons; the entire machine is created to let you work in a visual way. You can rearrange information on screen, refer to menus and windows, and display a variety of fonts and font styles.

Visual thinking is an important part of problem solving, not only for designers and architects, but for people in all fields. Drawing is one of the best ways to visualize a problem. Drawing something that

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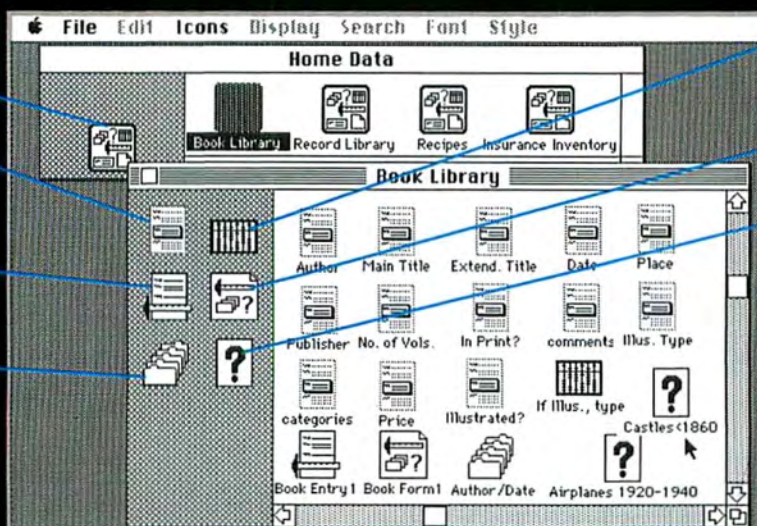
With Odesta Helix, you can model worlds of ideas, things, and relationships, and watch them live and interact upon your desktop. Odesta Helix is a new program – not an old program made to work on a new machine. It takes a new approach – letting you define and control the shape and form of information according to your own needs and style. Odesta Helix gives you a rich and powerful set of visual tools that lets you begin working immediately, without having to learn a programming language or battle with the restrictions of “spreadsheet” type thinking.

Relation icon
to set up different
“data bases”

Field icon represents
types of information

Template icon for
constructing and
changing forms

Index icon lets you get
at things in whatever
order you want



Abacus icon for
setting up calculations
and relationships

Form-view icon pulls
everything together

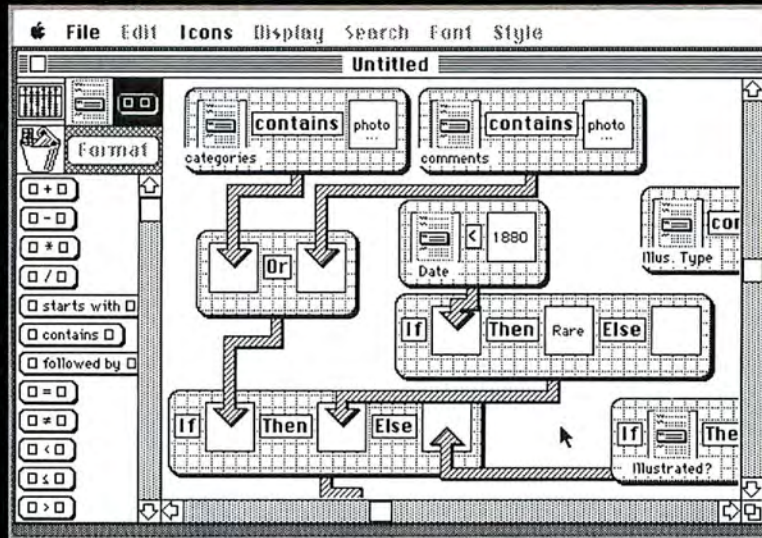
Query icon lets
you do interactive
searches

Odesta Helix uses icons (visual symbols) to represent ideas, relationships and functions as objects that you can easily manipulate. Create them by clicking on the icon-wells on the left, and dragging them to your desktop. Each opens to reveal deeper and deeper operations and values that may be invoked and shaped with the click of a mouse button.

Odesta Helix™ & Macintosh™

The Next Step.

Tiles act as arithmetic, text, Boolean and date operators, functions and values.



Visual building blocks let you set up even the most complicated statement or calculation and use it whenever you want to. Drag tiles out from the list at the left. Drop icons into the tile holes, or type in numbers or text. Connect the tiles by pulling arrows around. This whole calculation is represented by a single abacus icon that may be used on any form, and you may make up as many as you feel like.

Book Form 1	
Author:	Billings, Robert William
Main Title:	Antiquities of Scotland
Extended Title:	The Baronial and Ecclesiastical of Scotland
Place:	Edinburgh
Date:	
Publisher:	William Paterson
No. of	
Categories:	Scotland Castles Abbeys
Illustrated?	Yes
What Kind?	
Comments:	quarto, a.e.g.; full polished calf, with elaborate gilt designs and red & blue labels on spine. Abt. 60 full page plates per volume.
Price:	\$225.00
In Print?	No

Search	
Find Next	
Find Previous	
Find First	
Find Last	
Find All	
Replace	
Delete	
Clear Form	
Show Selection	

Here is a form-view being used in conjunction with an interactive search form (query icon titled "Castles < 1860"). One aspect of the radically innovative design of Odesta Helix is that you can enter, query, edit, and print information all from one window – without having to shift from one mode or application to another. Another reflection of this dynamic design is that if you make a change in one window, you see the result pop-up in any open related window.

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First in the Maccessories family of enhancement products is the **Swivel**. A slim swivel base that attaches underneath the Macintosh, making it easier to reposition the computer.

It goes everywhere the Macintosh goes, even inside the carrying case.

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There are two anti-static **Dust Covers** in the family. One protects your Macintosh and keyboard. The other takes care of your Imagerwriter.

Leave your delicate, intelligent modem at home. The **Portable Modem** is the perfect traveling companion for the Macintosh. It's small, sturdy, battery powered, weighs less than a pound and even has its own carrying case. The Portable Modem operates at 300 baud with any communications software.



The **Control Center**, styled to fit underneath the external disk drive, provides fingertip control over your whole system. There's a master switch to power the whole system on and off, and separate switches for a printer, modem and one auxiliary device. It also protects your whole system from power surges, line noise and static shocks.



The **Universal Printer Stand**, for the Apple® Imagerwriter®, also fits most other dot matrix printers. It raises your printer 1½" from the desk at the front and 4½" at the back,



an angle that allows you to monitor your printer's performance more easily. By raising your printer a few inches from the desk, the Universal Printer Stand solves the problem of where to store your paper. Several hundred sheets are accommodated neatly underneath.

The **Disk Case** provides safe storage for 36 Macintosh disks. And it comes with a handy packet of spare disk labels.



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Maccessories Type Fonts is a series of type fonts in sizes of 15 point type and larger. Perfect for headlines, bulletins, anywhere you need a larger typeface. Each disk includes three fonts in various sizes and a selection of business icons.

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Available at Apple dealers everywhere. For more information contact Kensington Microware Ltd., 251 Park Avenue South, NY, NY 10010, 212-475-5200, Tlx: 467383 KML NY.

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Letters

Serious Competition

Gamestar, Inc., is an entertainment software company that creates only sports games for personal computers. Our titles run on Atari, Commodore 64, and Apple II series machines. We are presently converting our most popular release, *Star League Baseball*, to run on the Macintosh; we expect to complete it in the first quarter of 1985.

Gamestar is very serious about competing in the Macintosh market. We were therefore quite upset to read Shay Adams' article, "The Wizards Behind the Screen" [September/October]. Shay wrote, "Some exciting, competitive games that require individual joysticks for two players (Electronic Arts' *Archon* and Gamestar's *Star League Baseball*) won't be available because the Mac has only a single controller port."

We feel it was wrong for the author to write such information without first ascertaining that it was correct. It is also *Macworld's* duty as a high-quality and truthful publication to verify information before it is printed. We would appreciate your correcting Shay's statement in an upcoming issue.

Lois Kreitzberg
Gamestar, Inc.
Santa Barbara, California

The author carefully researched the availability of various games for the Macintosh. However, the correct information was unavailable at press time.—Ed.

MacPaint Enchantment

The *Gallery* section of *Macworld* is enchanting. And since I am an elementary school teacher, the mother of two children, and the owner of a Macintosh, I was particularly pleased to see a *MacPaint* drawing by a youngster in your July/August issue.

Never once have my children (aged 13 and 9) looked at the *MacPaint* manual. Yet they have become completely conversant with the program. Talents they never dreamed of have been realized on the Macintosh. I am amazed by their lack of inhibition and their unconcern for mistakes, and I am delighted with the high quality of their *MacPaint* artwork.

As a teacher, I see all sorts of artwork from students—from doodles to serious drawings—but I have never seen a kid sit down with pencil and paper and sketch something all day until it's just right. But my children show this dedication to their artwork when using the Macintosh. This sort of attention span is very special, and it shows the Mac's enormous educational potential.

There must be thousands of kids like mine out there. By giving them the opportunity to exhibit their work in *Macworld*, you could help increase their artistic and computing abilities. Children would be thrilled to see the creations of kids just like themselves displayed in a national magazine. And parents and educators would be encouraged to turn them loose on the Macintosh.

Therefore, I would like to see a "Young Artists" section in your magazine. At the very least, I would like the *Gallery* to indicate the ages of the artists, particularly when the artists are young.

Mrs. Dan J. Ramsdale
Carriere, Mississippi

We publish submissions from children, and we'll indicate their ages when we do so. Also, see our December 1984 issue for a special collection of drawings by young artists.—Ed.

The Software Vigil

Perhaps the two words most often used in *Macworld* are "potential" and "wait." The Macintosh was introduced almost a year ago and still there is a lack of varied and practical software

for this computer. On the day of the Mac's introduction, Apple announced that "hundreds" of software companies had had the Macintosh for over two years. A torrential flood of Mac software would be available in a matter of weeks.

Software companies have had over two years to work on their products and still have not developed all the "standard" software needed. Just how long is the Macintosh software development cycle? Is Apple truly supporting the software developers? There is also a shortage of support software from Apple itself.

The writers for many magazines and trade journals apparently wonder about these same problems. Often they rationalize Apple's tardiness and lack of support. The most common rationalization is: "The Macintosh is a radically new computer requiring programmers to adapt to a completely different style, and besides, it's difficult to run complex programs with 128K of memory. But when the 512K Mac is available, all kinds of fancy software will appear."

The 512K Macintosh was announced in September. Now stores are advertising the 128K Mac for \$1600 and the 512K machine for \$2400. Yet Apple wants the people who already

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paid \$2500 for a 128K Mac to fork over another \$995 for the upgrade. But the entire computer obviously costs less than \$1000 to make, since that is the price paid by the University Consortium schools.

Why wasn't the Macintosh released after the expanded memory was available? A delayed release would have enabled developers to design better software. And if Apple felt it just had to market the 128K Mac, why did it charge so much? At least Apple could have promised early purchasers low-cost (or even free) upgrades.

My trust and respect for Apple motivated me to buy a Macintosh even though I was aware of the machine's limitations. I felt certain that Apple would take care of its customers. However, since buying a Macintosh, I've lost that trust and respect. I truly feel that Apple has treated its customers unfairly.

Richard S. Luebke
Rancho Cucamonga,
California

Caveat Emptor

I am outraged. Apple's original descriptions of the Macintosh, as quoted in the press, made it clear that the Mac was a 512K system released in a temporary 128K version because 512K chips were unavailable. Now I am told (in contradiction to my experience with the machine) that the 128K Macintosh is a useful computer and will continue to be sold, while the 512K version will cost about \$1000 more. What's more, any purchaser of the 128K machine who wishes to upgrade to 512K must pay \$995 extra. This policy is a blatantly unscrupulous case of bait-and-switch.

As a professional programmer, I was intrigued and excited by the concept of the Mac-

intosh and eagerly awaited the release of the real, 512K machine. As a consumer, I am now disgusted by Apple's business practices and have no intention of throwing good money after bad. I am especially frustrated by this decision of Apple's, since I am sure that it will strangle the Macintosh in its cradle—and my already substantial investment in the machine will be wasted.

Kirk Rader
Los Angeles, California

Mac of His Dreams

I thoroughly enjoy *Macworld*, even though I don't have a Macintosh. I wish I could buy a Mac, but since I'm only 14 I don't have enough money. When my family bought our IBM PC a year and a half ago I was thrilled out of my mind—until the Macintosh appeared. Now, every night I dream that I'll find a Macintosh on my desk in the morning. I think the clerks at our neighborhood computer store will die if I ask to work on their Macintosh one more time. So I turn to your magazine to gaze at the wonderful pictures and articles and pretend I have a Mac of my own.

What makes me so attracted to the Mac? Is it the mouse? That's one thing. Is it the 3½-inch disk? Maybe. (I love that plastic container!) Perhaps it's the slick exterior design and the small footprint? Is it the deference the computer shows me, with its smiling Macintosh icons and obedient windows? Could be. Or is it that crisp, high-resolution screen? Yes, that's it! I'm attracted to the perfect squareness of each pixel! Sure, I can get a mouse



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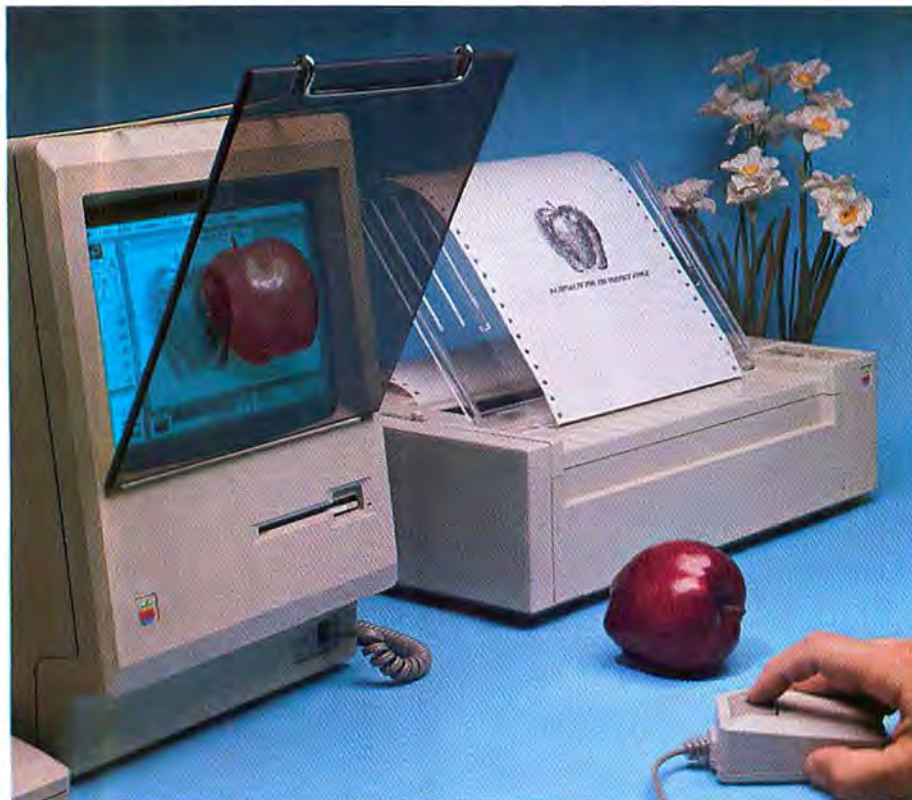
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Mouse-Ball Correction

Thanks for your recent "Hands On" article, "The Mouse Will Play" [September/October]. I have never done any programming, and the *Mouse-Ball* game provides valuable experience as well as entertainment. However, I have started the game three times and it still won't work correctly. At line 1150, I get either a syntax error or an error message, "RETURN without GOSUB." I double-checked the accuracy of my typing and I believe I made no errors. Is there an error in the program? I'll appreciate any help you can give me.

Marlena Kern
Library, Pennsylvania

Yes, there is an error in the Mouse-Ball program as printed. Line 50, which reads, "ON ERROR GOTO 1130," should read, "ON ERROR GOTO 1170." Some readers reported other problems that we believe were caused by typing errors. If you don't want to type in the Mouse-Ball listing, you can download the game (in a corrected version) from the Reference Library section of the Micronet Apple User Group on CompuServe. —Ed.

Letters should be mailed to Letters, Macworld, 555 De Haro St., San Francisco, CA 94107, or sent electronically to CompuServe 74055,412 or The Source STE908. □

for my PC, and I can create icons and windows to obey my commands, but I can't get that PC screen of mine to shape up and into scale.

Many people say that Apple should not have designed the Macintosh with a black-and-white screen. But if the Mac had a color screen, its price would have to be raised to keep that crispness. Tell me, why does the Mac have such sharp pixels? A monochrome screen uses one electron ray to sweep the whole display. A color screen uses three rays—red, green, and blue. Since these three rays do not focus at exactly the same spot, each pixel is blurred. Only very, very expensive color monitors can get crisp images like the Macintosh's. Yes, a color Macintosh would be very nice, but I'm satisfied with the Mac as it is.

Scott Hysom

Mercer Island, Washington

Time Travel

I just want to compliment *Macworld* on its great science fiction. The detail is fantastic. Not only have you created great reviews of nonexistent software for my Macintosh, but you have backed them up with fictional advertisements. Maybe some sharp company will pick up your great software ideas and bring them to market.

All joking aside, your magazine is great. I like my Macintosh too, but I'm waiting much too long for the software I want. An editorial policy of reviewing products only when they are ready for release might improve this situation. Companies would feel more pressure to release products on the scheduled date if they knew they would receive no press coverage until then.

Don Lueder

Long Beach, California

Macworld does its best to publish accurate and timely product information. However, since we have a three-month editorial lead time, product release dates may be changed before readers receive the magazine.—Ed.

Planned Obsolescence?

I am a salesperson who needs to schedule appointments and events as much as a year in advance. I purchased the *Habadex* program by Haba Systems immediately after its release because it was supposedly capable of long-range scheduling. When I ran the program, however, I discovered that I could not schedule appointments beyond 1984—a limitation not mentioned in the documentation.

In September 1984 I finally received a coupon for an updated disk, containing a 1985 calendar, from Haba Systems. Of course, I had to visit my computer retailer to obtain the actual disk. And since *Habadex* still lacks a 1986 calendar, I will presumably have to swap disks again next year. This procedure is annoying even when updates are free—and Haba Systems has not guaranteed permanent free updates.

This omission of a long-range calendar seems deliberate. Most businesses need to plan at least two years in advance, and a larger calendar could not take up that much extra memory. It appears to me that Haba Systems is forcing its customers to look at (or even buy) future products by selling them a program that self-destructs every year.

Fred Pinkerton

Lynn, Massachusetts

DON'T JUST PLAY WITH YOUR MOUSE

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DATE _____

RECEIVING REPORT
DATE _____ SHIFT _____
RECEIVED FROM _____

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SOLD TO _____ CUSTOMER NO. _____
JOB DESCRIPTION
JOB TITLE _____
DEPARTMENT _____
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CORPORATION

INVOICE
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CUSTOMER NO. _____
TERMS _____
DATE OF SHIP _____

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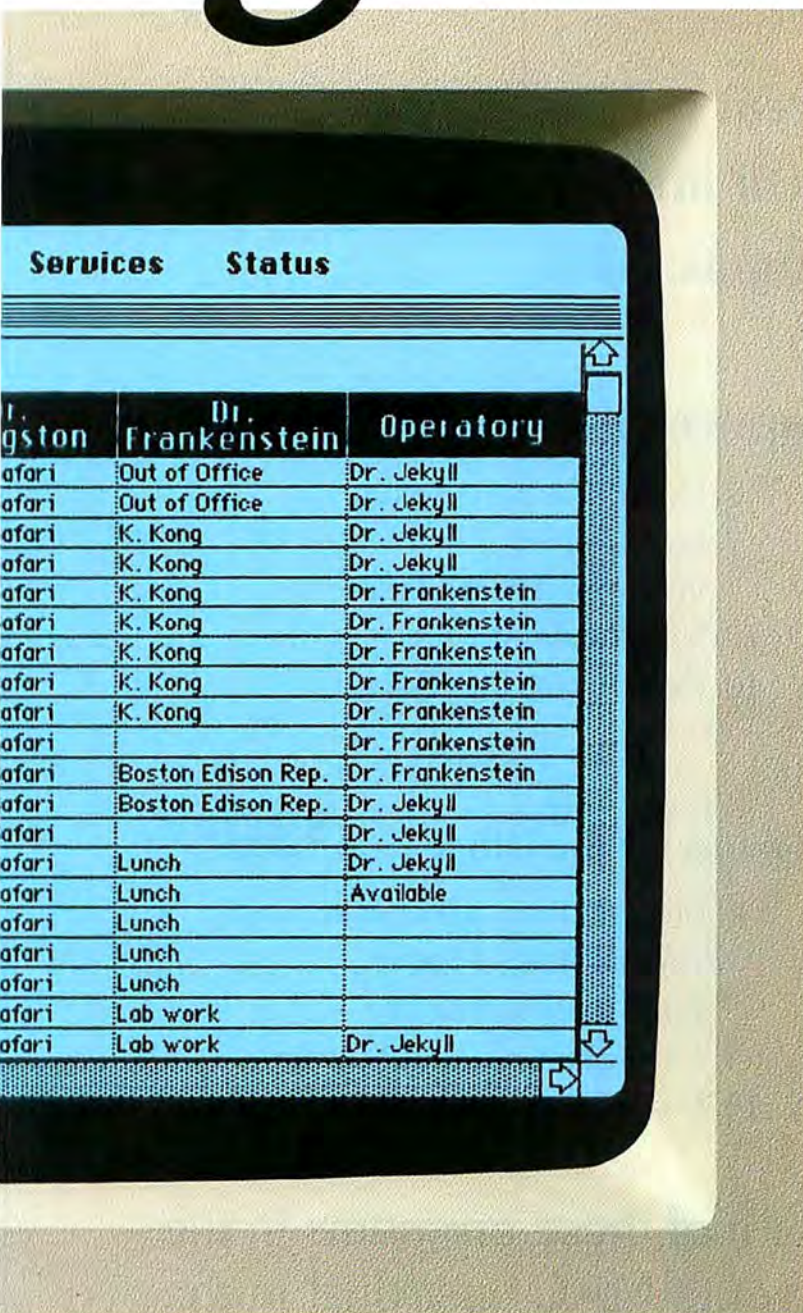
Time	Dr. Jekyll	Hygienist Hyde
830A	Mel Brookson	Prep K. Kong
845A	Mel Brookson	Prep K. Kong
900A	C. Dracula	Boris Levine
915A	C. Dracula	Boris Levine
930A	Igor Burakoff	Boris Levine
945A	Igor Burakoff	Boris Levine
1000A	Igor Burakoff	Rebecca McMaim
1015A	Igor Burakoff	Rebecca McMaim
1030A	Herman Munster	Prep R. Wolfman
1045A	Herman Munster	Prep R. Wolfman
1100A		Bella LeBlanc
1115A	Rick Wolfman	Bella LeBlanc
1130A	Rick Wolfman	Bella LeBlanc
1145A	Rick Wolfman	Bella LeBlanc
1200P	Black Lagoon	Bella LeBlanc
1215P	Black Lagoon	Lunch at the Pit
1230P	Black Lagoon	Lunch at the Pit
1245P	Black Lagoon	Lunch at the Pit
100P		Help Dr. F in the Lab
115P	Dave Dowde	Kat Woman

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830A Mel Brookson	555-1234	Clean	West	225.45
845A Mel Brookson	555-1234	Clean	West	225.45
900A C. Dracula	555-5678	Extraction	East	7.00
915A C. Dracula	555-5678	Extraction	East	7.00
930A Igor Burakoff	555-9012	Extraction	East	7.00
945A Igor Burakoff	555-9012	Extraction	East	7.00
1000A Igor Burakoff	555-9012	Extraction	East	7.00
1015A Igor Burakoff	555-9012	Extraction	East	7.00
1030A Herman Munster	555-3456	Extraction	East	7.00
1045A Herman Munster	555-3456	Extraction	East	7.00
1100A				
1115A Rick Wolfman	555-7890	Cleaning	East	125.00
1130A Rick Wolfman	555-7890	Cleaning	East	125.00
1145A Rick Wolfman	555-7890	Cleaning	East	125.00
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1215P Black Lagoon	555-1234	Cleaning	East	125.00
1230P Black Lagoon	555-1234	Cleaning	East	125.00
1245P Black Lagoon	555-1234	Cleaning	East	125.00
100P				
115P Dave Dowde	555-5678	Cleaning	East	125.00

choose. Use the side scroll bar to view the entire day's schedule. Or the bottom scroll bar to see the previous or next day.

a good time?

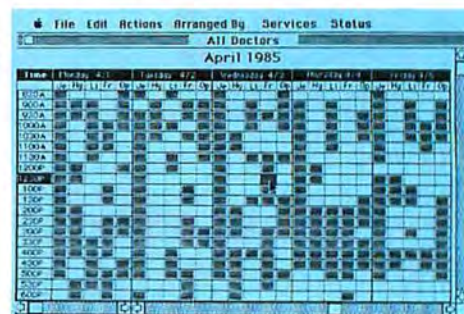


amazing is that when someone tells you "I'm only available on Tuesdays," a single view of all Tuesdays in April is just a click away.

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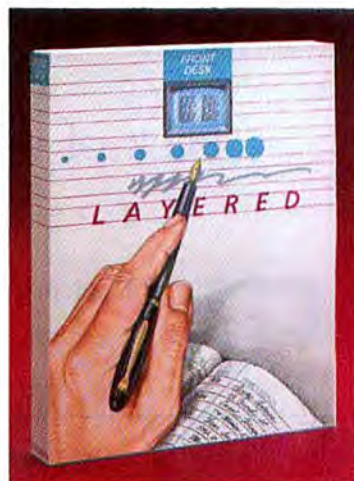
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Macworld View

News and notes for the Macintosh community

Edited by Janet McCandless

Macworld View reports on new products and developments in Macintosh technology. We will cover items of interest to Mac users and comment on industry trends. We welcome contributions from readers and pay up to \$50 for the items we use. Please include your name, address, and phone number with your contributions; send them to Macworld View, 555 De Haro St., San Francisco, CA 94107.

Campus Connection

Computers in education are nothing new to faculty and students at Dartmouth College in Hanover, New Hampshire. In fact, the college developed the first fully operational time-sharing computer in 1964, and two Dartmouth professors developed the most widely used computer language, BASIC. Computer writer Keith Thompson reports that when freshmen at Dartmouth College received their Macintoshes on the first day of school, as part of the Apple University Consortium program, the students were able to plug their

Macs into a university computer network accessible from each dorm room and nearly 3000 other locations on campus.

Through the network, students have access to any of the school's ten campus mainframe computers. They can also gain access to off-campus information services, such as Dow Jones, The Source, CompuServe, and BRS Afterdark. Given the proper software, individual Macintoshes will eventually be able to communicate with each other.

Dartmouth has two parallel networks operating on campus: AppleBus and a network for IBM PC owners. Hardware developers are working on a circuit board for the PC that will allow it to participate on the faster AppleBus.

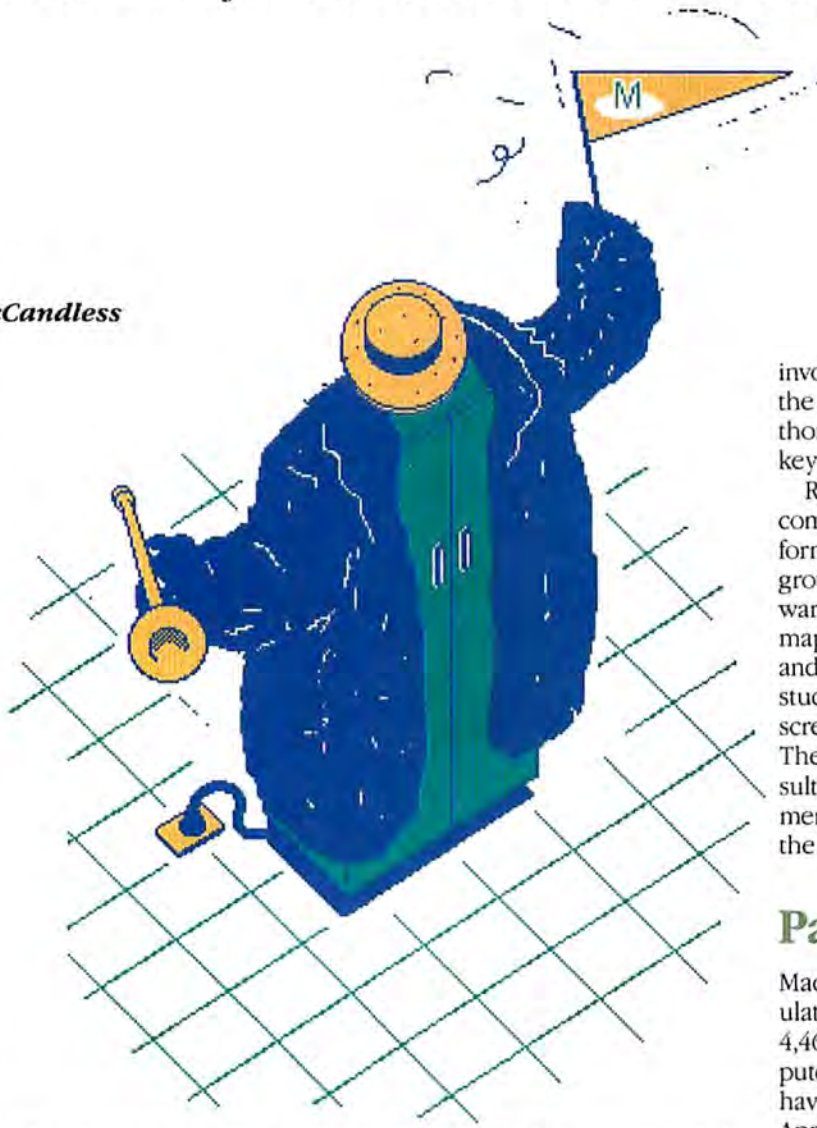
The network can be used for electronic mail among students, faculty, and staff. Almost 25 percent of the school's 1.2 million library books are catalogued on computer. Students

involved in research can query the catalogue by subject, author, title, or a combination of keywords.

Raymond Neff, director of computation at Dartmouth, informs us that faculty user groups are developing courseware, such as geographical mapping for a history course and a music program that lets students manipulate scores on screen and hear the results. The college will share the results of its courseware development with the other schools in the Consortium.

Patents

Mac owners have been speculating about patent number 4,464,652 filed by Apple Computer in August 1984. Questions have surfaced about whether Apple has received a patent for pull-down menus. According to a source at Apple, the company is not patenting pull-down menus per se, but rather the sequence (click, drag, and release) involved in selecting a command from the menu. The abstract accompanying the patent indicates that the patent



Hieroglyphs

Because the size of the Scrapbook limits the number of individual signs that can be stored at any time, they have to be stored as individual docu-



For those less inclined to design their own signs, video digitizers will enable Egyptologists to film and convert the images to digital information that the computer can then interpret. Once the signs are stored in the computer, they can be adapted through *MacPaint* for specific applications.

Mac Draws Young Programmers

Think Educational Software is the first company to release Mac reading and math games for the elementary and secondary school level. Within four months of becoming certified developers through Apple, students Gregory Berkin, Frank Marafino, and others attending the State University of New York at Potsdam developed two programs: math/reading software *MacEdge*, and *Mind Over Mac*, a disk of games. The math/reading skill games replace the mimeographed repetitive drills of elementary school with screen graphics and rapid video and audio feedback.

The company is looking for administrators in the secondary school systems to field-test their products. Products under development include a computer literacy game and a scientific game aimed at the university level in which students identify the molecular structures of hidden objects. Contact Think Educational Software at 16 Market St., Potsdam, NY 13676.

Another group of young developers (the oldest is 19) turned their basement, a former practice site for their rock band, into a software company.

Challenger Software just produced *Legacy*, an adventure game for the Mac. President Gary Winer was working as a sales manager for a computer retail store when he got the idea for the game. Craig Bass, the band's drummer, and Andy Sass, the bass player, teamed up to write the text for *Legacy*. Kurt Mahan did the programming, and Ed Ouano designed the graphics. They recruited friends from high school and expanded to 13 people. For more information, contact Challenger Software, 18350 Kedzi, Homewood, IL 60430.

With products being developed by university and high school students, we may soon see new applications for the Mac that none of us has even imagined.

The Game of Life

If you belong to a Macintosh user group, you have probably acquired *Life*, one of the first Macintosh public-domain programs, written by Apple's Bill Atkinson (the author of *MacPaint*). According to computer writer Christopher Allen, *Life* is based on a game invented in

1970 by Cambridge mathematician John Conway. Although it's not a game you can win or lose, you may get lost in its intricacies.

Life is played on an invisible grid. Each "cell" on the grid is "dead" or "alive," depending on the following laws (from a series of articles by John Gardner in *Scientific American*):

- *The Law of Survival*. A cell with two or three neighbors will survive for another generation.

- *The Law of Death*. A cell with more than three neighbors will die of overcrowding. A cell with fewer than two neighbors will die of isolation.

- *The Law of Birth*. An empty cell with exactly three neighbors will be filled in the next generation.

Life simulates these laws on a small grid in a Mac window. You create a pattern of cells using the mouse, and the program then simulates these laws over a period of many generations. The pattern either remains stable or changes through the generations, depending on its shape. Some patterns move across the window or grow to devour other patterns; others atrophy and die.

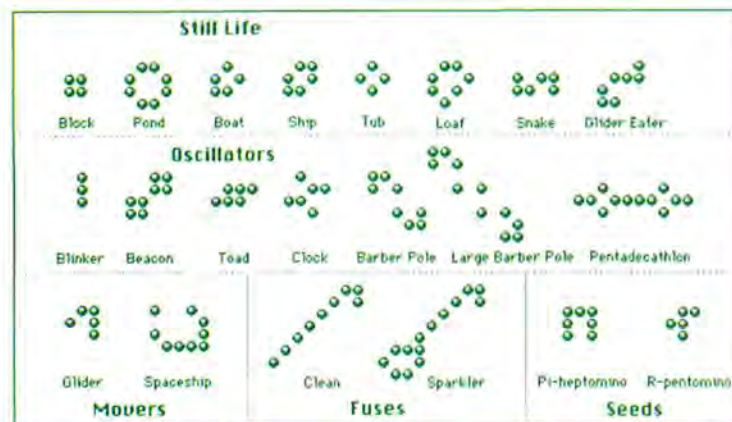
You control the speed of generations with the number keys. Most people consider speeds 3 and 4 the most comfortable for viewing. Pressing the Return key starts the simulation. The Mutations option in the Life menu randomly places a cell on the grid, possibly disrupting otherwise stable patterns. The Restart option tests the patterns and, if they are totally stable, restarts the grid with a new random pattern.

Over the years, players of *Life* on other computers have classified and given names to certain standard shapes. Still Lifes are stable and never grow or move. Some examples of these forms are the Block and Pond shapes.

Another class of objects, Oscillators, are also stable; although they shift from shape to shape, they always return to their original patterns. Most Oscillators, like the Blinker and the Beacon, have only two phases, but the Pentadecathlon repeats itself after 15 generations.

Movers are a special class of Oscillators that maintain their pattern but move to different locations. The most popular is the simple Glider. New *Life* players tend to pit a Glider against a Still Life. The Glider Eater Still Life was designed to prevent this maneuver, and it can survive some Glider attacks.

Fuses are patterns that destroy themselves. Some are "clean" and leave only a small Still Life, while others are "dirty" and leave behind patterns that grow.



Players of the game of *Life* have classified and given names to patterns that behave in certain ways according to the game's Laws of Birth, Survival, and Death.

Among the most interesting patterns are Seeds. Although they start simply, they grow into fantastic shapes and patterns. The R-pentomino, for example, grows and changes for 1103 generations and leaves behind eight Blocks, six Gliders, four Blinkers, four Beehives, a Boat, a Ship, and a Loaf.

The most sophisticated patterns are the Factories. One, called the Glider Gun, is an Oscillator that creates one new Glider after another. You can pit two Factories against each other and see which one survives.

Artificial Intelligence

Lisp, the principal language of artificial intelligence programming, has long been the exclusive province of mainframe computers. But a Santa Barbara, California, software company called ExperTelligence plans to release ExperLisp for the Macintosh during the first quarter of 1985. According to President Denison Bollay, ExperLisp will be a complete implementation of Lisp, containing all the features of the Lisp dialects available on larger machines but tailored to the Mac. A Lisp interpreter will allow Mac programmers to develop artificial intelligence applications.

Artificial intelligence (AI) is informally defined as programs that enable computers to do tasks commonly assumed to require human intelligence. Typical examples of AI research are robotics, expert systems, natural language understanding, and reasoning about the world in a "common-sense" manner. Unlike most programs, which are based on numeric computation, AI programs rely on symbolic computation to implement reasoning, perception, and judgment. Symbolic computation is where Lisp comes in. BASIC, Pascal, and other familiar languages are great for algebraic calculation and data processing. Lisp is not very good at either of these tasks but is designed for logical deduction and symbolic processing.

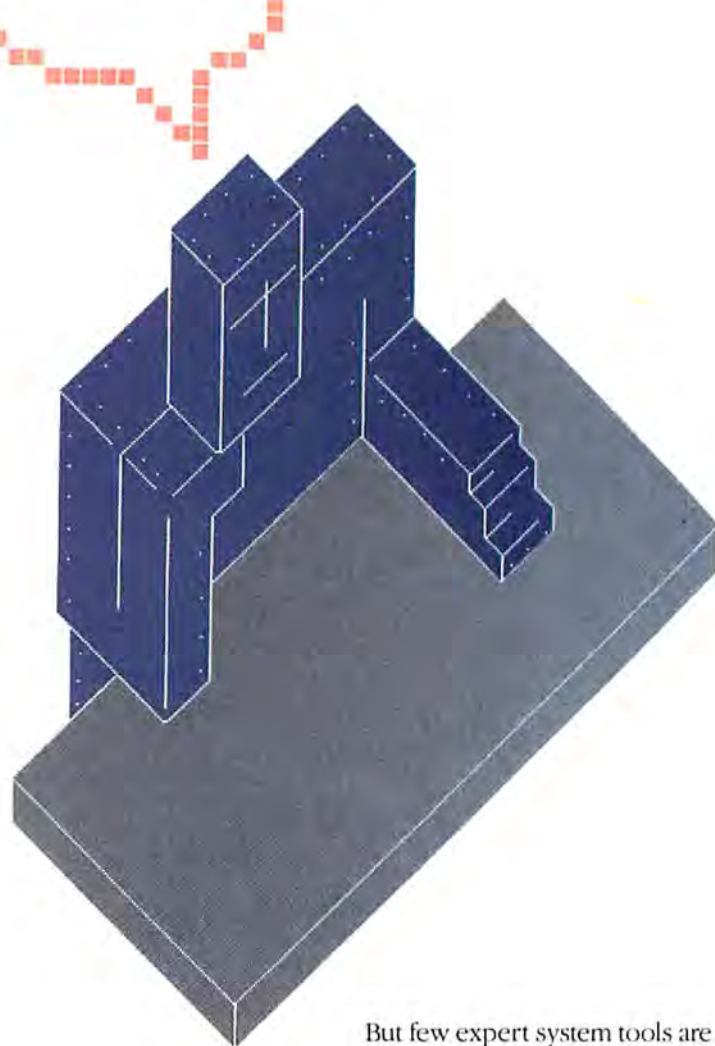
AI has been a research topic as long as computers have been in existence, but only recently have any of these programs escaped from laboratories into commercial applications. Expert systems are a good example. They got their name because they act as an expert in a small part of a discipline such as medicine or geology. A "knowledge engineer" spends months with an expert, watching how he or she does the job and learning what the expert has to know to do it. The knowledge engineer then puts all this knowledge (facts, strategies, fuzzy rules of thumb) into a program that can then perform like the expert in that one task.

Some well-known expert systems diagnose bacterial infections, evaluate the commercial potential of an ore deposit, and advise oil well operators about what to do if a drill bit gets stuck thousands of feet down a well. One of the impor-

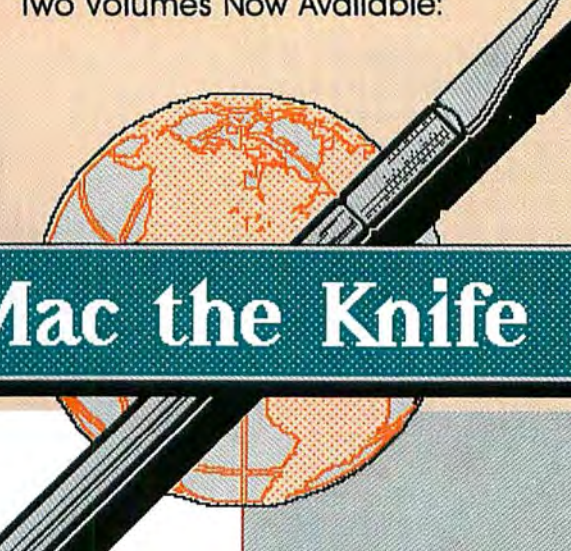
tant ways expert systems differ from other programs is that the knowledge is usually encoded in an English-like way that is natural and understandable to the expert. The program can reason and explain its reasoning on demand.

The advent of Lisp interpreters for the Macintosh means that Mac owners can build their own expert systems or at least run them as application programs. Since not everyone has been trained as a knowledge engineer, some companies are beginning to sell software tools for building expert systems.

But few expert system tools are available for personal computers and none are available for the Mac, because Lisp and AI programs are notorious for the large amount of memory they use. ExperLisp, which uses approximately 128K and doesn't require a hard disk, will be practical only on a 512K Mac. ExperTelligence plans to build an expert system using its ExperLisp. As soon as Lisp runs on the Mac, it will be only a matter of time before AI programs also appear.—Allan Terry □



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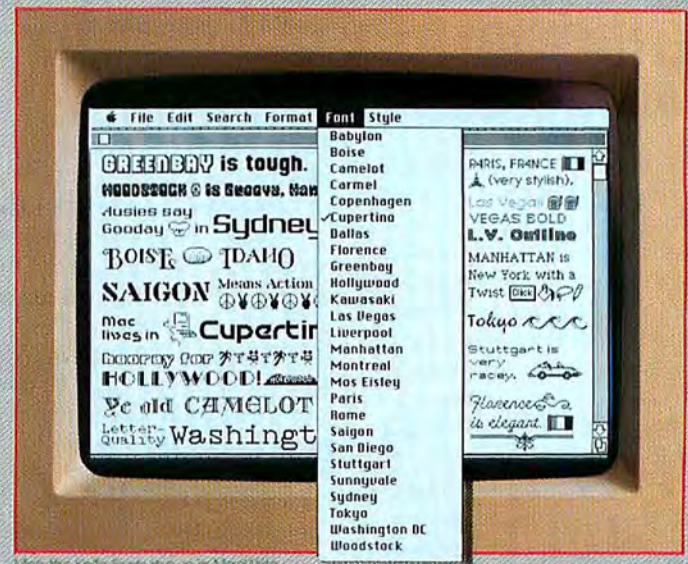


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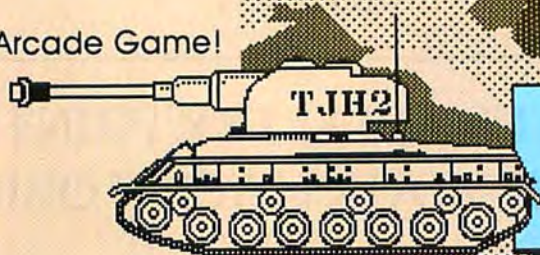


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Also New Arcade Game!

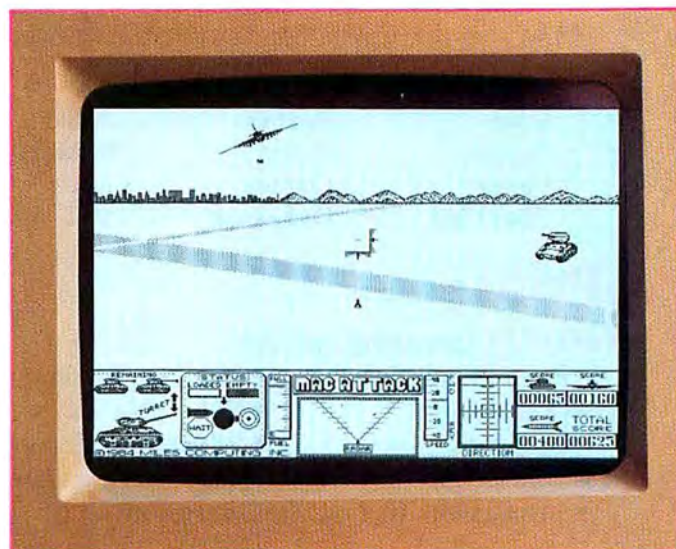


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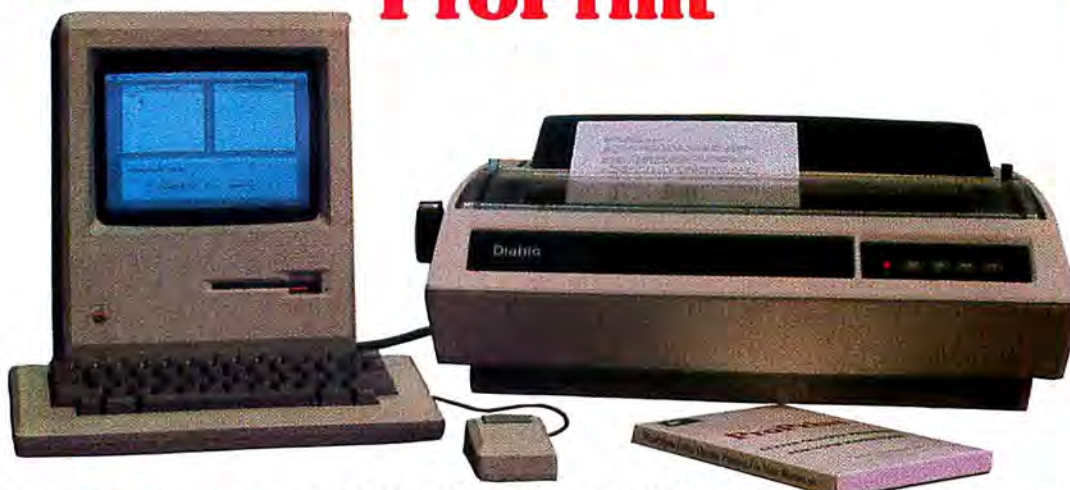
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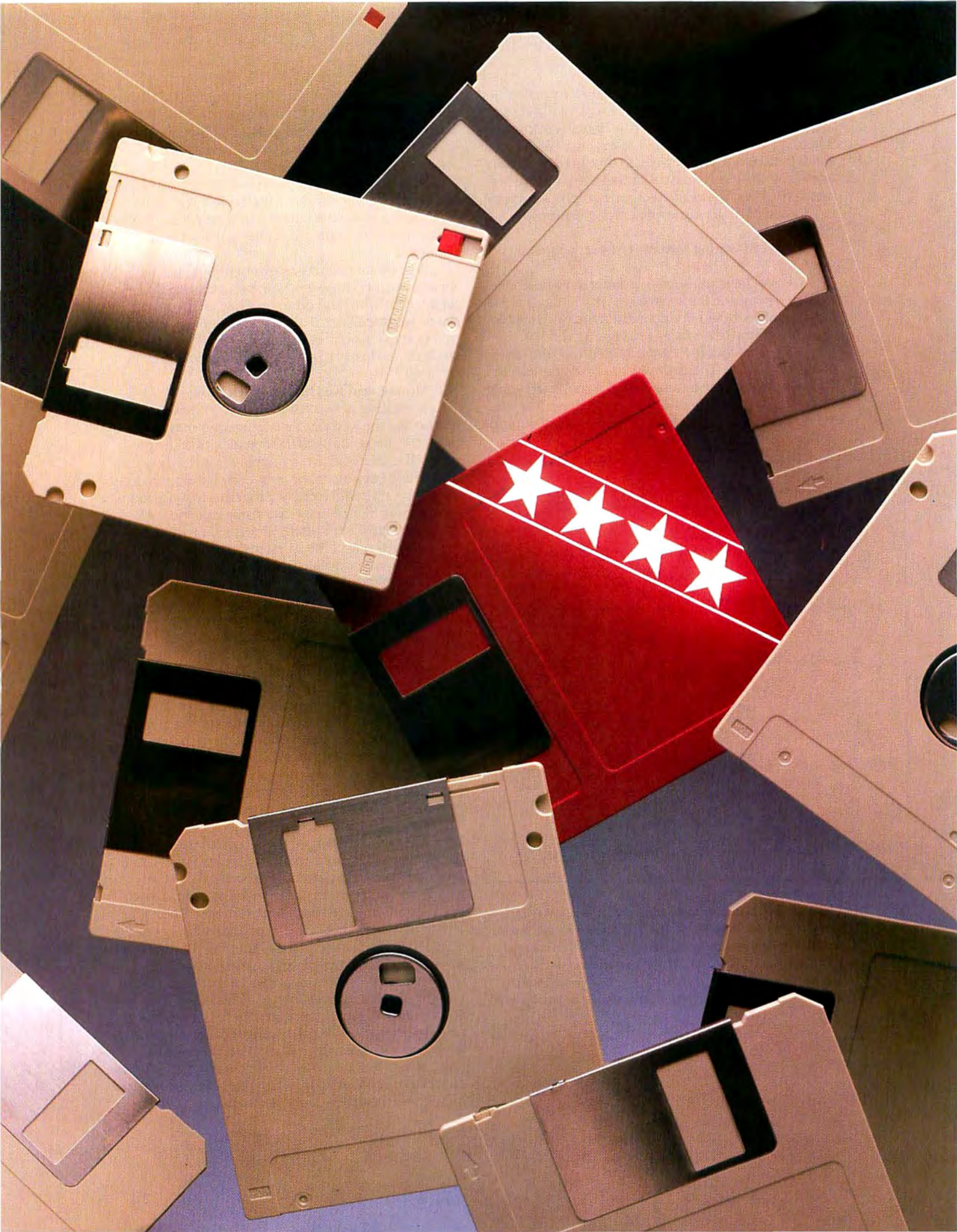
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A Shopper's Guide to 4★Star Software

Danny Goodman

Now that the trickle of Macintosh productivity software has become a healthy flow, you probably feel flooded by promises from the dozens of programs on computer store shelves. As a consumer, your job is to sift through them and find the right data base, graphics, or financial-modeling solution to all your troubles. The question has changed from “Where is the Mac software?” to “Which program should I buy?”

But Macintosh software is often much more difficult to evaluate than software for other computers. To be truly productive, programs must not only produce the desired results, they must also be well integrated into the unique Macintosh operating environment. By paying close attention to details, you'll be able to distinguish useful tools from useless toys. Four key elements you should examine in a new program are: how it adheres to Mac editing conventions, how mouse and keyboard movements flow together, what shortcuts are provided for experienced users, and how it reduces repetitive typing and having to remember all kinds of esoteric commands and procedures.



■ Getting Started: Software

Conventions for selecting, deleting, inserting, and replacing text are built into the Mac operating environment. Editing procedures, such as double-clicking anywhere on a word to select it or selecting a block of text and typing new text to replace it, should be consistent from program to program. Whether the software is a word processor, a spreadsheet, or a graphics program, you should have the same text-editing features available.

Here's an editing features test to try out in the store:

1. Place the text insertion pointer anywhere in a word and press the Backspace key. The letter to the left of the pointer should disappear, and the word should close up around that space (see Figure 1a).

2. Double-click the mouse button with the pointer in the same word. The entire word should be selected. Without pressing the mouse button again, start typing a new word. The original word should disappear, and the new one should appear in its place (see Figure 1b).

3. You should have an Undo command available, preferably in the Edit pull-down menu (it should also have the ⌘ -key equivalent of ⌘ -Z). This command should restore the original word, except for the one letter you backspaced over in Step 1 (see Figure 1c).

4. Finally, select one word as in Step 2, invoke the Cut command (preferably with the ⌘ -X keyboard equivalent), move the cursor to the end of the document, and Paste in the word (⌘ -V), as shown in Figure 1d.

A program that passes this minimum test has editing commands consistent with programs like *MacWrite*, *MacPaint*, and others already on the market. But as we'll see later, if a program features logical and practical extensions of these commands, you should study them closely to see if they make sense to you.

Mouse and Keyboard Work Flow

Evaluating new software based on how well the mouse and the keyboard work together may take some diligence, depending on the complexity of the program. The idea is to avoid hopping from keyboard to mouse and back again for frequently used operations. Instead, you should look for programs that use either a sequence of mouse maneuvers or a sequence of keyboard maneuvers for often-performed procedures.

Perhaps one of the worst instances of mouse-and-keyboard gymnastics occurs in *MacWrite*. The program places inordinate demands on your hands when you replace a word with another typed on the keyboard. You must take one hand away from the keyboard to move the text insertion pointer to the errant word and double-click to select it. Then your hand has to come back to the keyboard to type in the new word. After that, you must reposition the pointer to the end of the document or wherever you want to continue working. There is no way around this problem in any word processing program I now know of, but programs in other categories avoid such keyboard-and-mouse games.

Multiplan is a good example of how mouse movements can be nicely grouped together and how a smooth work flow can be established between keyboard and mouse. You use the mouse to select a block of cells in two or more columns for new entries. The program knows that whenever such a block is selected, text entry proceeds from left to right, across each succeeding row. Each time you press Enter after typing in figures or labels, the pointer advances to the next cell in the selected block—keeping your hands on the keyboard and away from the mouse (see Figure 2).

My favorite programs are those that work almost entirely in a single entry mode, such as *MacPaint* and *MacDraw*. Except for text entry, there is no practical need to bring the hand operating the mouse to the keyboard. Occasionally you still need to press the Shift, ⌘ , or Option keys in conjunction with the mouse button, but you can do this with one hand on the mouse and the other on the keyboard.

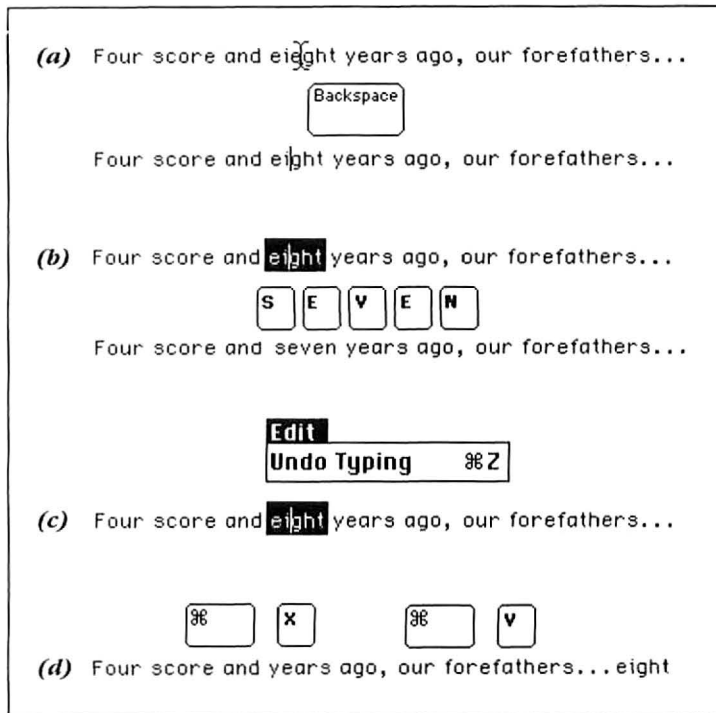


Figure 1

Programs should adhere to the minimum Macintosh editing conventions illustrated in this test. The Backspace key should delete a character to the left of the text insertion pointer (a). Replace words by double-clicking the mouse to select the word and then retype the new text (b). The replacement should be undoable (c). Cutting and pasting text should be possible with ⌘ key combinations (d).

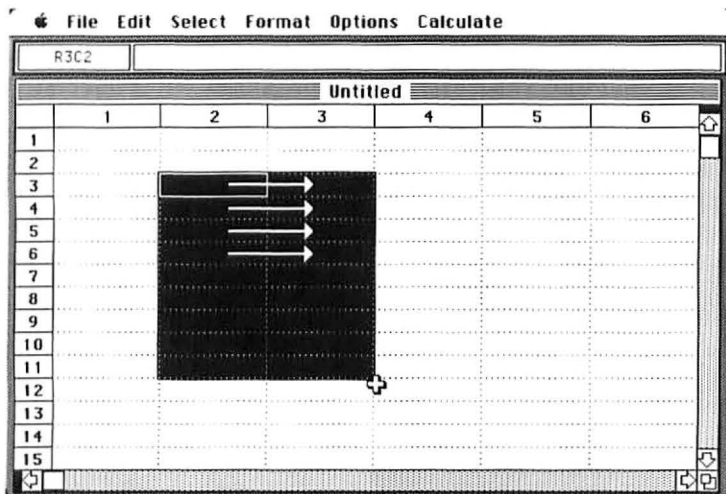


Figure 2

In Multiplan, the mouse sets up a long keyboard work session by establishing a pattern of cells for data entry. Programs that keep you working for long stretches with either the mouse or the keyboard are the most efficient.

Keyboard Command Shortcuts

Another point to check in a new program is whether it contains keyboard alternatives to the commands in the pull-down menus.

Except for Cut, Copy, Paste, and Undo, keyboard commands are rarely consistent from program to program. One programmer's name for a particular function is different from another's. For example, in *MacPaint* there are three ways to enter text in relation to the I-beam pointer: Aligned Left, Middle, or Right. The keyboard equivalents shown in the Style menu are ⌘-L , ⌘-M , and ⌘-R , respectively (see Figure 3). In this case, the programmer chose mnemonic keys—the command letter is also the first letter of the keyword. But *Multiplan*'s keyboard commands to align your column headings to the left, middle, or right are ⌘-F , ⌘-G , and ⌘-H , respectively (see Figure 3). *Multiplan*'s programmers used three keys in a row, both alphabetically and physically on the keyboard. While I'm more likely to remember the *MacPaint* keys, I could soon memorize the *Multiplan* commands if I used the program enough.

Don't feel pressured to master keyboard commands immediately. Once you've established a work pattern with the program, keep a lookout on the menus for keyboard commands. Slowly work the keyboard commands into your work habits, provided they improve your productivity. The goal, after all, is to accomplish more work in less time.

When looking at new Mac software, then, make sure to pull down all the primary menus, which appear across the top of the screen. Note how many commands have keyboard equivalents. From my point of view, the more keyboard commands there are, the better (see Figure 4).

Mouse Shortcuts

You should also seek out programs with shortcuts that save you from moving the pointer across the screen to perform a single function. *MacPaint*, *Multiplan*, and *Microsoft Word* feature some wonderful mouse shortcuts worth noting as examples of what to look for in new programs.

In *MacPaint*, for example, double-clicking the pencil icon to get into FatBits is more efficient than pulling down the Goodies menu to select the FatBits option. One FatBits shortcut is pure genius in my opinion. With this shortcut, you combine the Option key

MacPaint

Style	
Plain ⌘-P	
✓Align Left	⌘-L
Align Middle	⌘-M
Align Right	⌘-R

Multiplan

Format	
✓General	
Align Left	⌘-F
Align Center	⌘-G
Align Right	⌘-H

Figure 3

Keyboard shortcuts speed work for you once you gain experience with the program. Unfortunately, not all keyboard commands (such as operations performed by pressing the ⌘ key and one other key) are the same from program to program. MacPaint uses mnemonic commands for its text alignment, while Multiplan uses three keys in alphabetical and physical order for the same functions.

Figure 4

Menus like this Microsoft Word menu contain many ⌘ key shortcuts—including frequently used functions like Open, Close, Save, Print, and Quit. When testing new software, check all pull-down menus for ⌘ key shortcuts.

File	
New	⌘-N
Open...	⌘-O
Close	⌘-W
Save	⌘-S
Save As...	
Page Setup...	
Print...	⌘-P
Print Merge...	
Printer Setup...	
Quit	⌘-Q

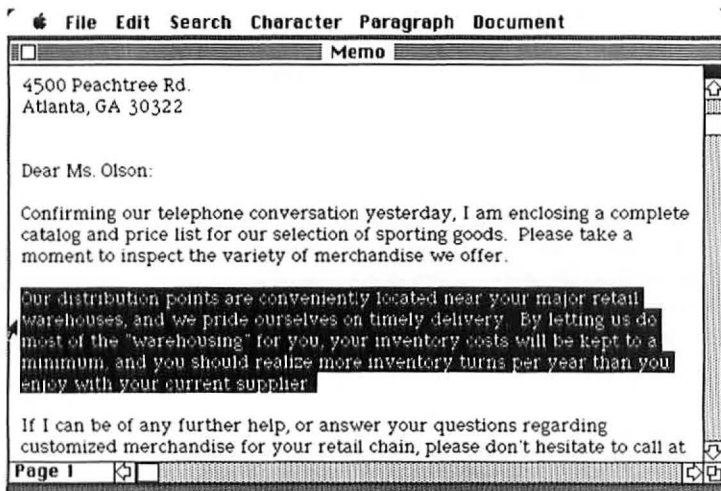


Figure 5

Productive mouse shortcuts include Microsoft Word's ability to select a line of text by clicking on the left margin next to the line. Double-clicking selects the entire paragraph. This operation doesn't require precision dragging from the beginning to the end of the paragraph, as MacWrite does.

with the pencil icon selection to turn the pencil pointer into the hand for dragging a picture around. This operation greatly reduces round-trips between the pencil and hand icons.

In *Multipan*, one mouse shortcut speeds incremental movement in any direction through a spreadsheet. When you drag the pointer beyond any window edge, the spreadsheet scrolls before your eyes, a great improvement over the precise movement you must use to do the same thing with the scroll bars.

A noteworthy *Microsoft Word* mouse shortcut is the ability to select complete paragraphs. Instead of carefully positioning the text pointer at one end of the paragraph and dragging it to the other end, all you need to do is double-click anywhere in the paragraph's left margin. Instantly, the entire paragraph is selected (see Figure 5).

Mouse shortcuts may not be easy to find while exploring new software in a store. Only when you work with the program on a daily basis will some of them surface. Ask people who have used the program about shortcuts, and look in the program's documentation for a table of contents or index listing called "mouse shortcuts."

Minimum Typing Requirement

When you are working feverishly on a particular project, your train of thought is often interrupted with file-maintenance chores, such as saving your work every 15 minutes. A useful software feature is one that spares you from recalling the document name and re-typing it at each save. Here are some tips to save you re-typing and a test to determine if a new program lets you avoid re-typing.

Periodic saves with a single-drive Mac will be faster—that is, you'll reduce disk swapping—if you transfer a copy of the document you're working on to the program disk. The less typing needed to accomplish this transfer, the better.

If you look at the procedure for opening and transferring a document from one disk to another, the steps (as they apply to a single-drive Mac) are as follows:

1. Once the Mac has been started with a startup disk, eject the startup disk and insert the storage disk containing the desired document.
2. Open the document icon.
3. Obey the dialog boxes for swapping the storage disk and the appropriate program disk.
4. Once you are in the program, with your document on the screen, choose the Save As command from the File menu. In a well-designed program, the name of the document is already shown in the dialog box, highlighted in reverse (see Figure 6).
5. To save the document to the current disk (the program disk is also preselected for you), either click the Save box or press the Return key.

Step 4 is the key. By having the name of the current document already in the dialog box, you don't have to remember the name of the document or re-type it. As long as that document name is in the box, you can eject and insert disks all day, making copy after copy.

With a two-drive system, the transfer procedure is faster if you also maintain a backup storage disk. When you finish your work session, choose the Save As com-

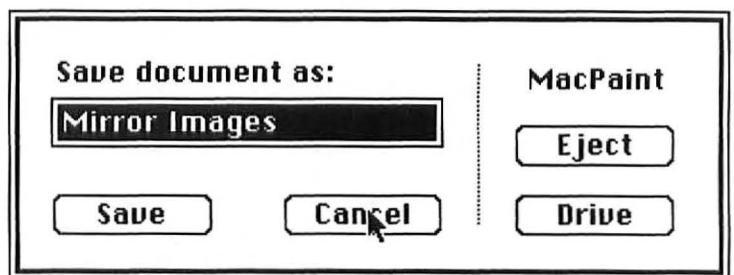


Figure 6

MacPaint keeps track of the name of the file you are currently working on and "pre-types" it for you in the Save As dialog box. Because of this feature, you can save a document to different disks without re-typing the file name.

mand. In the Save As dialog box, click the button that says Drive, click the Eject button to remove the primary storage disk, insert the backup, and either click the Save box or press the Return key.

The in-store test on a program, then, should go something like this:

- Start up the program and enter data (numbers in a spreadsheet, words in a word processing program, or a data entry form in a data base program).
- Choose the Save As command.
- Assign a document name (your name or "test," for example) and save the document.
- Make one more entry or edit something in the document currently on the screen.
- Again issue the Save As command.
- The dialog box should appear with your original document name highlighted. If so, the program passes the minimum typing test.
- Try to rename the document by typing another document name. If the old one disappears and the new letters you type appear in the box, the program will probably pass the editing conventions test as well.

Minimum Human Memory Requirement

As long as you're using the Mac's powers to help reduce your typing, you should expect the Mac to help you rely less on your memory. Document names are pieces of information that a program should keep track of for you.

Macintosh software from Apple does a good job of keeping track of document names. When you choose the Open command from the File menu (from within a program), a dialog box appears on the screen, with an alphabetized directory of documents that can be opened from the program (see Figure 7). To open a document, you just scroll the name into the window and double-click the pointer over it. (You can also select the name and click the Open box, but that takes more mouse movement than necessary.)

An example of the worst-case possibility in opening a document can be found in the original version of Microsoft BASIC, MBASIC 1.0 (version 2.0 of the language has corrected the deficiency). When you select the Open option from the File menu, you are presented with a dialog box (see Figure 8). It asks you to type in the program name you want to load into memory. Unless you click the Cancel button, return to BASIC, and type the Files command (which displays a list of all files on the disk), you probably won't remember exactly the program name you need. This method violates both the minimum typing and the minimum human memory requirements for sound Mac programming. Be on the lookout for signs of sloppy programming like this example.

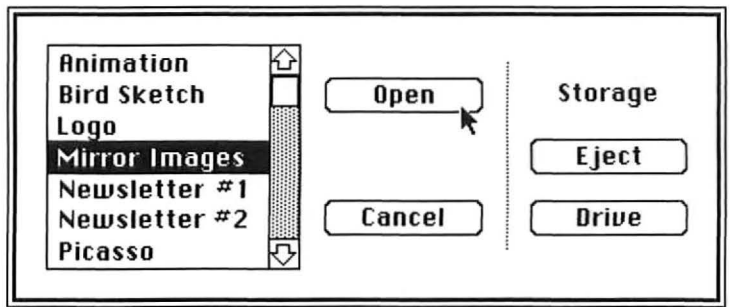


Figure 7

The process of opening a document from within an application should make use of the dialog box that presents a listing of all files on a disk. To open the document, you select it with the pointer and click the Open button; or for more efficiency you can simply double-click the document name in the smaller box on the left.

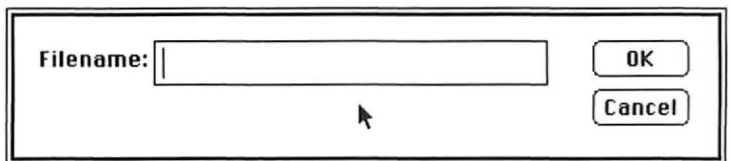


Figure 8

In this dialog box you must remember the document name and type it in before you can open a document. Figure 7 shows the way this operation should be performed in Mac programs.

Other Evaluation Tips

Beyond the special requirements for Macintosh software, there are other principles to follow when shopping for software, regardless of the computer or program category. Of particular importance is the software's documentation.

It is difficult to judge a manual while thumbing through it at the store. On quick perusal, the original *Multiplan* manual for the Macintosh version seems to have everything a good manual should have: screen illustrations, a lengthy reference section for experienced users, and an index. But when a beginner tries to learn to use the program from the manual, it is clear that there are some gaps and incomplete descriptions of key points.

■ Getting Started

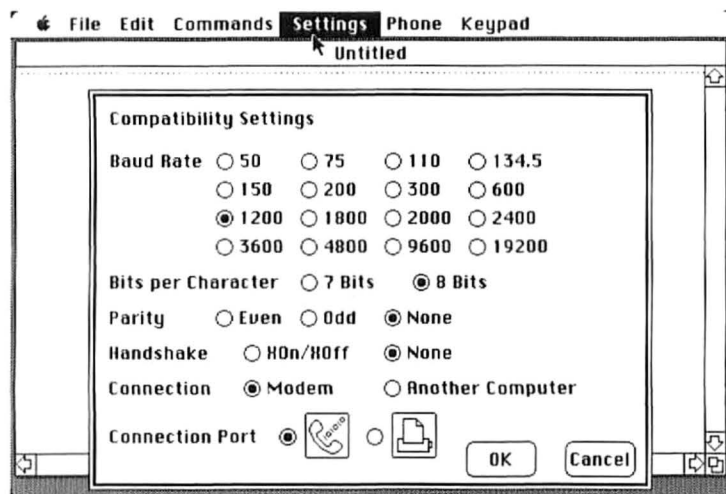


Figure 9

Examine the menu selections that link to dialog boxes—selections with ellipses after them. The dialog box in this illustration is displayed when you select the Compatibility option from MacTerminal's Settings menu. In such dialog boxes you will find clues to the power of a particular program.

One thing you should search for in documentation is a separate tutorial. The tutorial should not only lead you step-by-step through the basic operation of the program, but should also provide a real-world example. I understand a program much more quickly when I see precisely how the program works with examples of the kind of work I do.

Another thing to consider when you shop for software is the intuitiveness of the program's operation. Most people want to be able to sit down, turn on the computer, and start using the program without ever opening the manual. If you are familiar with the general category into which a program falls—financial modeling, word processing, data base, or graphics—a truly intuitive program should provide enough information on the screen and in the pull-down menus to lead you right away through a simple application of the program.

When you first try a program, take a moment to look at the opening screen to make sure the visual environment suits the work you intend to do. Next, pull down each menu and study the options. Are they grouped logically according to the name of the menu? Do the options make sense to you in the context of the program? Are they right for the application? Or are they ambiguous? I foresee Mac menu specialists evol-

ing soon, whose sole purpose is to squeeze the meaning of a command description into fewer than ten characters so it will fit inside a menu column.

Select the menu options that are followed by ellipses (such as Save As) to study the dialog boxes the menus call up. Not only should the dialog boxes offer you many choices (including the Cancel option), but the choices should be clearly labeled so you understand them (see Figure 9).

Finally, try to work with the program without studying the documentation. You might not get too far, but the further you get, the more intuitive the program's operation will be for you. That means that even after you've studied the documentation, you will be able to find your way out of difficulties by searching for a menu choice, rather than tearing through the manual for help.

Now that Mac software is more diverse and plentiful than in its early days, it is very important for you to be critical and selective in your choices. Put a prospective purchase through its paces on precisely the kind of work you do, whether it be for college coursework or a board of directors presentation. Shun programs that are more show than substance. Embrace those that do the job elegantly and productively. The more you demand of software developers, the further they will advance the state of the art of Mac programming.

We'll all benefit from that. □

■■■■■■■■■■ **Danny Goodman**
is a Contributing Editor of *Macworld* and
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books. He has appeared as a product
reviewer on the Public Broadcasting System
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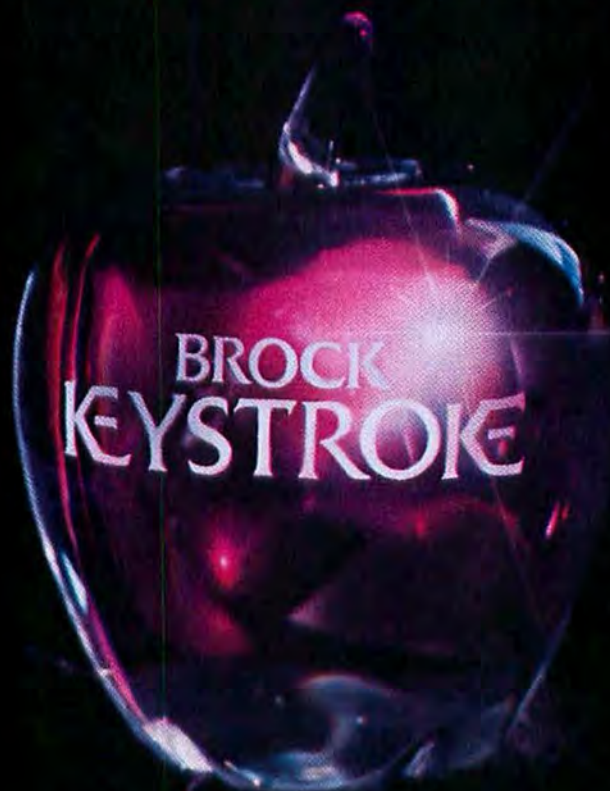
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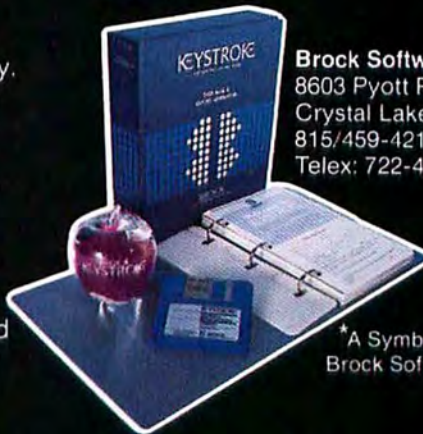


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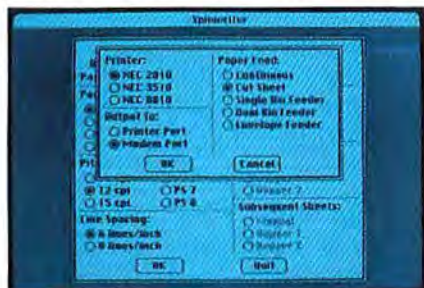
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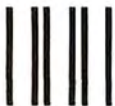
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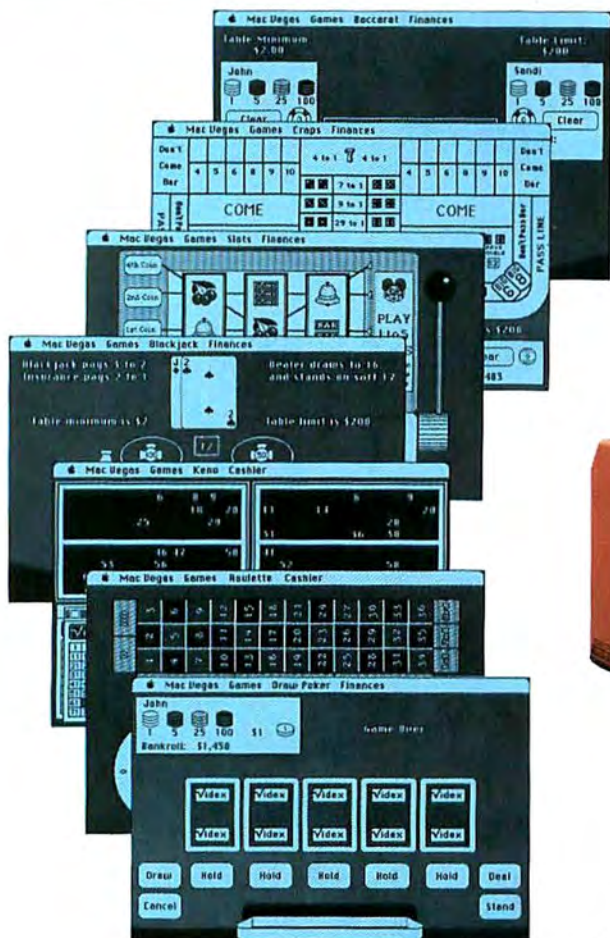
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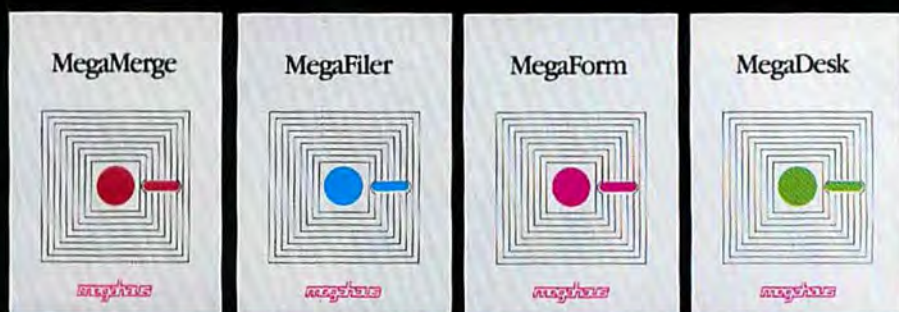
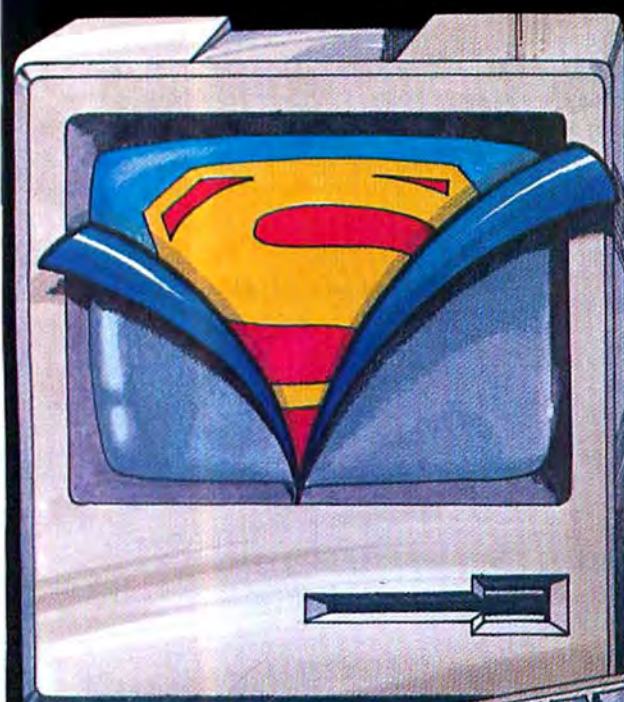
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Get Info

Macworld's tutor answers questions about using the Mac

Lon Poole



Get Info answers questions about the Macintosh and how it works. Most inquiries deal with application programs, but no topic is too elementary or too advanced. Discussions range from setting up the Mac to programming in BASIC and Pascal. When you need advice about using the Mac, drop me a line. I cannot respond to individual letters, but I will answer the most representative questions.

Have you ever wondered about the almost lyrical sounds the Mac's disk drive makes when it formats a disk, or why the Imagewriter prints a page and then rolls the page backward to insert a header when you print a document in draft mode? This month's *Get Info* explains those oddities and answers other questions about the Mac's "undocumented" behavior.

One reader wants to know about the Rescue document that sometimes appears when he opens the *MacPaint* icon. Another reader is curious about the Print Catalog command in *MacPaint*, and wants an explanation of the > and < symbols in the *MacPaint* Short Cuts screen. Someone else is looking for a source that stocks

Macintosh T-shirts. One questioner wants to be able to select portions of several *Multiplan* worksheets and have them printed unattended during his lunch hour. A few people seem to have a problem with fonts when they transfer *MacWrite* documents between disks. And, finally, several people wrote that they had trouble with the procedure I described in the September/October issue for installing 9-point Geneva in *Multiplan*'s System file.

The Disk-Formatting Waltz

Q. When the Mac initializes a disk, the disk drive makes some uneven noises that make it sound like the Mac is humming a tune. Can you explain the various sounds the disk drive makes during the disk-formatting procedure?

*Aira Harrison
Deming, Washington*

Steve Woita, an electronics engineer who formerly worked at Apple, answers this question about the Mac's peculiar disk-formatting "song."

A. The reason the disk drive makes sounds is that the Mac has a variable motor speed controller. This variable motor speed strategy allows the 3½-inch disk to hold more informa-

tion than the 5¼-inch disks used with most personal computers. To understand why this strategy works, let's first look at the anatomy of a Mac 3½-inch disk. Each disk consists of 80 tracks, and each track has a number of sectors for storing information. The outermost 16 tracks have 12 sectors, and the innermost 16 tracks have 8 sectors (see the figure "Mac Disk Format")

Let's say the Mac is laying down information on the outermost 16 tracks. Since there is more surface area on the outermost part of the disk, more information can be stored in that area than on the innermost tracks. On most personal computers the disk spins at one speed; if the disk head lays down information on the outermost tracks, there are sizable gaps between sectors because the disk controller is not smart enough to slow down the disk to take advantage of this potential storage space.

The fact that the Mac's disk speed can be controlled allows the disk drive to vary the disk's RPMs so that more information can be placed on the outermost tracks with fewer gaps between sectors. Likewise, when the disk head lays down information on the innermost tracks, the disk speed increases be-

Mac Disk Format

This diagram shows how the tracks and sectors are laid out on a Mac disk. Tracks are like the grooves in a stereo record. Each track consists of several sectors, each of which contains 512 bytes of information.

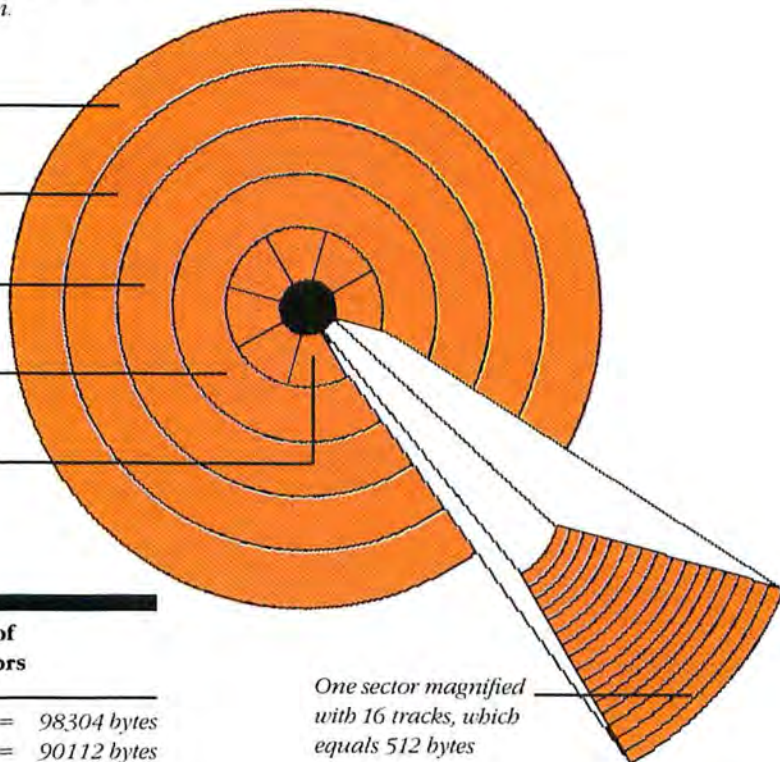
1. There are 12 sectors within these 16 tracks

2. There are 11 sectors within these 16 tracks

3. There are 10 sectors within these 16 tracks

4. There are 9 sectors within these 16 tracks

5. There are 8 sectors within these 16 tracks



	No. of tracks	Bytes/sector	No. of sectors				
1.	16	×	512	×	12	=	98304 bytes
2.	16	×	512	×	11	=	90112 bytes
3.	16	×	512	×	10	=	81920 bytes
4.	16	×	512	×	9	=	73728 bytes
5.	16	×	512	×	8	=	65536 bytes

Total space available on disk = 409600 bytes

cause there is less disk surface area on which to store information. The increased disk speed in turn provides increased storage capacity and greater efficiency in terms of disk access speed.

The design of the disk controller is based on the IWM (Integrated Woz Machine, the disk controller card originally designed by Steve Wozniak) that was used on the Apple II, except the device is shrunk down to fit on one chip!

Font Changer

Q. Sometimes when I copy a *MacWrite* document written in a particular font—such as New York—from one disk to another, the copy comes to life in the Geneva font. And a few times when I copied a *MacWrite* document to another disk, the copy was initially displayed in the Chicago font. Any ideas about why this happened and how to eliminate the problem?

Rachel Cabn
San Francisco, California

A. There are a couple of possible explanations for the problem of unrequested font changes. It may be that you were using an early version of *MacWrite* (Version 1.0) in which New York-12 was *MacWrite*'s startup font. The System file on the *MacWrite* disk to which you copied the document might have a newer version of *MacWrite* that uses Geneva-12 as the startup font, and doesn't contain the New York font you used to create the document. If so, the Mac's Font Manager (a part of the User Interface Toolbox in ROM) substitutes Geneva for New York in the specified font size.

You can determine which version of *MacWrite* you have by checking the About *MacWrite* option in the Apple menu or by using the Font Mover to see if New York-12 or Geneva-12 is a "system" font (system fonts are indicated by an asterisk and cannot be removed). Your New York font probably changes to Chicago because the Mac is almost out of memory. In that case, the Mac swaps out most of the fonts to clear space for working on documents or printing, and the Font Manager substitutes the system font, Chicago, for the original font. Since Chicago is used for the menus and dialog and alert boxes, the Mac always retains that font in RAM.

The Imagewriter's Reverse Gear

Q. When I print documents in draft mode, I usually have to watch the printer to make sure it doesn't lose control of the paper when the paper rolls backward to print a header. Is there any way to avoid this situation?

Kellie Burks
Sedona, Arizona

A. As Owen Densmore explained in the September/October issue of *Macworld* (see "The Imagewriter and Beyond"), draft printing has some peculiarities. Some applications store headers at the bottom of the document file. When you print the document, the Imagewriter prints the main text and then feeds the paper backward so that the header can be inserted. The only way to avoid this situation is to omit headers or to use footers instead.

If you are having problems with the paper-feed mechanism, you should check the paper path. Generally, if the paper sits below the printer, it feeds into the printer more smoothly. When you print documents in standard or high resolution, the printer "draws" the bit map for each page exactly as it appears on the screen, so headers are printed before the main body of the document.

MacPaint to the Rescue

Q. I wonder if you can explain *MacPaint*'s annoying habit of occasionally renaming my files "Rescue." I know of others who have experienced this same phenomenon.

Jim Palmer
South Salt Lake City, Utah

A. *MacPaint* doesn't actually rename your file. The program creates a document named Rescue from two files named Paint1 and Paint2, which it uses for disk work space while you're working on a drawing. *MacPaint* creates the Rescue document only if Paint1 and Paint2 exist when you open the *MacPaint* application icon. If you quit *MacPaint* normally—by choosing Quit from the File menu—the files Paint1 and Paint2 are automatically discarded. If you quit *MacPaint* by switching off the power, or if the power is interrupted while you're working on a drawing, the work files Paint1 and Paint2 remain on the disk.

The next time you open the *MacPaint* icon, the program spots the work files and uses

them to rescue the drawing that was in progress when the power went off. Your original file should still be on the disk, but the drawing in the file will not include any changes you made since the last time you saved the drawing. This technique doesn't work in all cases, however; sometimes the Mac is unable to update the temporary files, so you may lose your drawing.

If you open the document icon instead of the *MacPaint* icon, *MacPaint* does not try to rescue anything from existing Paint1 and Paint2 work files. Instead, it replaces any existing Paint1 and Paint2 work files with copies of the file you opened, and you will probably lose the most recent changes you made to the drawing. Therefore, if you see icons labeled Paint1 and Paint2 in the directory window, open the *MacPaint* application icon to see whether you want to save the rescued document.

Macintosh T-Shirts

Q. I was wondering how I could get one of those white T-shirts with the Macintosh logo.

Noah Land
Santa Rosa, California

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fornia, 800/632-7979 in California, or write for a catalog to The Apple Collection, P.O. Box 306, Half Moon Bay, CA 94109. The catalog also includes a sweat-shirt and beach towel with the Macintosh graphic, plus a wide variety of other gear with the Apple logo on it. There are high-tech desk accessories, clothing, lapel pins, mugs, luggage, and even a sailboard.

Unattended Multiplan Printing

Q. I have seven separate *Multiplan* worksheets on one disk. How can I get *Multiplan* to continuously print out selected columns from each of the seven worksheets, without having to give the Print command for each worksheet? This is important as these worksheets are long and I would like to have them print out unattended.

*Jon Roskies
Montreal, Quebec*

A. The Finder can print more than one *Multiplan* worksheet directly from a directory window, a folder window, or the desktop. All you do is select the worksheet documents (by enclosing a group of icons with the desktop's selection rectangle or by holding down the Shift key as you click on several icons) and choose Print from the File menu.

The worksheets are printed one after the other in a sequence determined by the arrangement of the icons in the window or on the desktop. The

Finder starts with the worksheet whose icon is located nearest the upper-left corner of the window or desktop. After that document is printed, the Finder proceeds to queue up documents, starting from the left side of the desktop window and moving to the right, and then down to the next row of icons, again moving from left to right, and so on. If the Finder encounters a worksheet you selected from a disk that's not currently inserted, it prompts you to insert the disk. (This will of course prevent unattended printing.)

Most of the page setup and print options in effect the last time a worksheet was saved are enforced automatically when it is printed. But regardless of previous settings, you always get one copy of all pages of each worksheet you selected. Thus, you cannot use the Print Selection Only option to control which columns are printed when you print multiple documents.

You can keep a column from printing by collapsing its width to zero, however. There are two ways to do so. You can select the column (or select several columns), choose Column Width from the Format menu, and enter 0 in the dialog box that appears. Alternatively, you can collapse a column with the mouse. Move the pointer along the line of column numbers until it points to the right-hand boundary line of the column you want to collapse. You'll notice that the pointer shape changes to a two-headed arrow bisected by a vertical bar. Press the mouse button, drag the boundary line to the left until it meets the left-hand column boundary, and release the mouse button.

Compressed Multiplan II

Q. As you suggested in the September/October issue, I removed 10-point Seattle from my *Multiplan* disk. This procedure causes *Multiplan* to display 9-point characters, but these are very difficult to read. I am using Version 1.02 of *Multiplan*, Version 1.1 of the Finder, and the System file that came on my *Multiplan* 1.02 disk. What am I doing wrong?

*Les Wilson
Clinton Corners, New York*

A. You really can get *Multiplan* Version 1.02 to use the smaller 9-point Geneva font instead of the usual 10-point Seattle. As I said, you simply remove the Seattle fonts from the System file on your *Multiplan* disk. However, this procedure works reliably only if you previously updated your *Multiplan* disk to use the System file that comes with Version 1.1 of the Finder. If you use an earlier version of the System file (such as the one that comes with *Multiplan* 1.02), *Multiplan* ends up shrinking 12-point New York to a 9-point size instead of using 9-point Geneva. The result is an unpresentable worksheet.

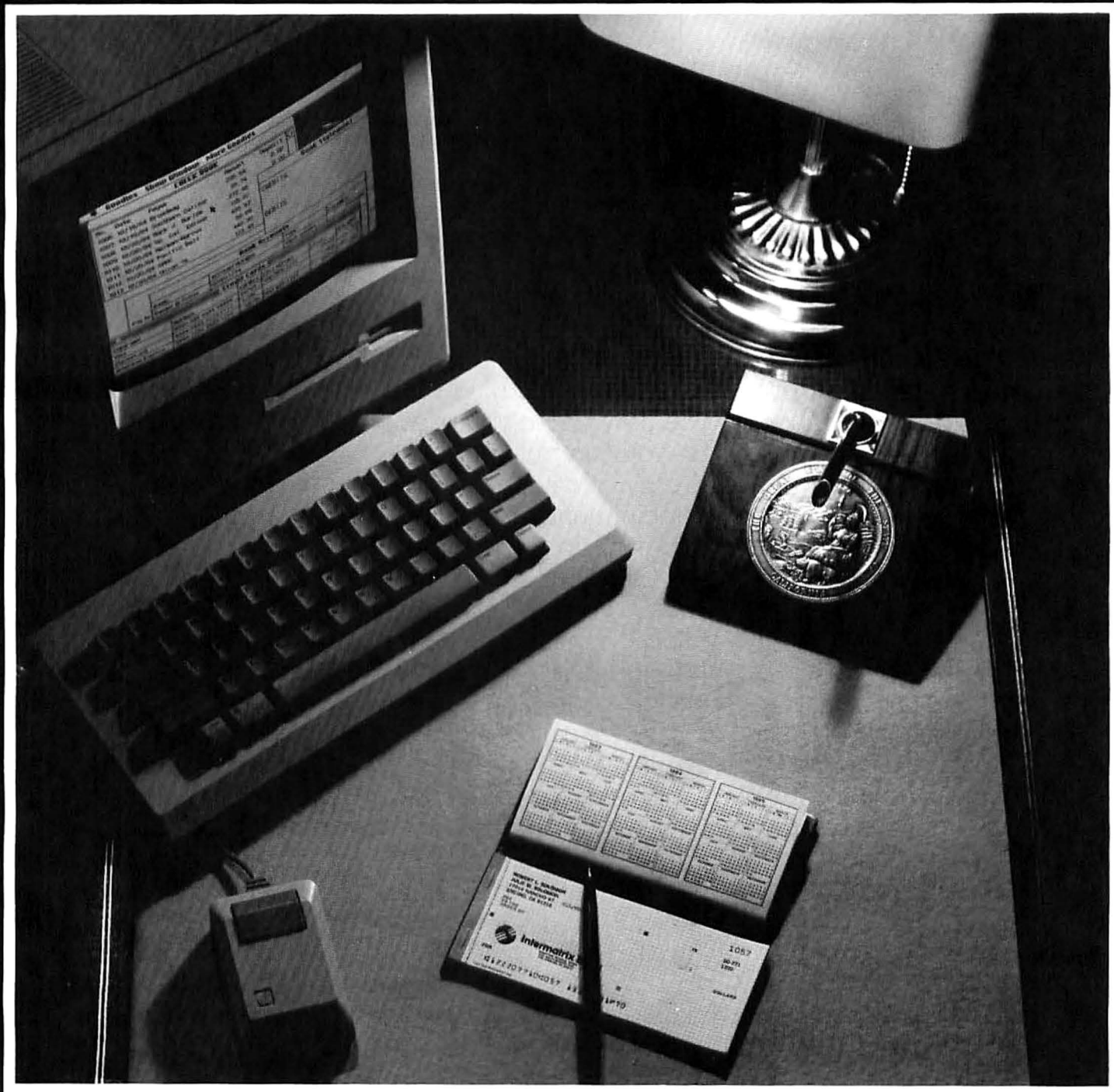
You can use the Font Mover program to see whether you have the correct version of the System file. The earlier version of the System file reserves Chicago-12, Geneva-9, Monaco-9, and New York-12. The version you want reserves Chicago-12, Geneva-9, Geneva-12, and Monaco-9. If your *Multiplan* disk has the earlier version of the

System file, you can copy the more recent version from some other disk. But first use the Font Mover to copy the Seattle fonts to the Fonts file so you'll still have them after you replace the System file that contains them.

*Send your questions to
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*Lon Poole is a Contributing
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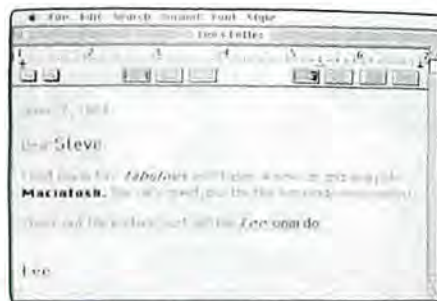
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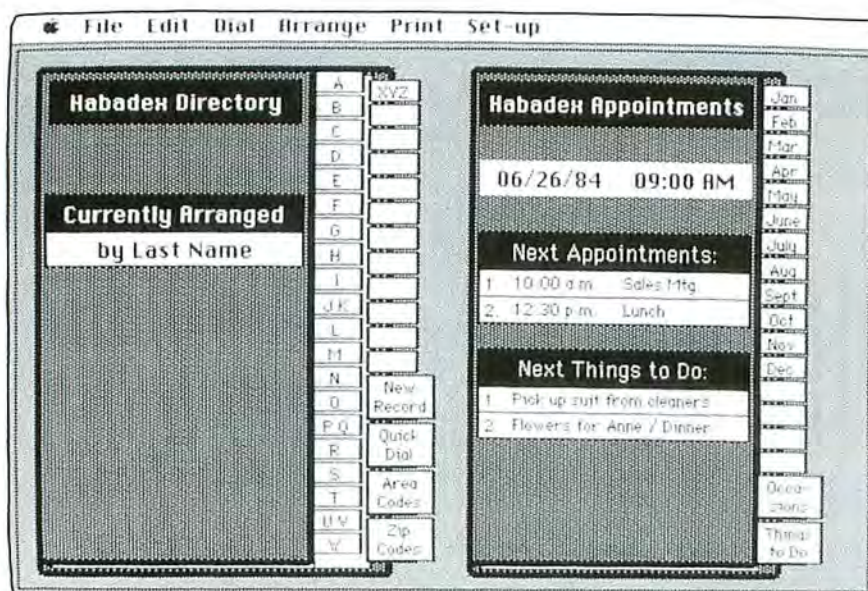
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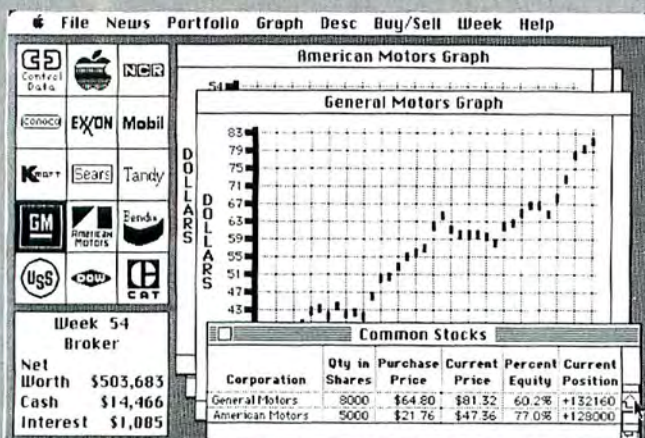
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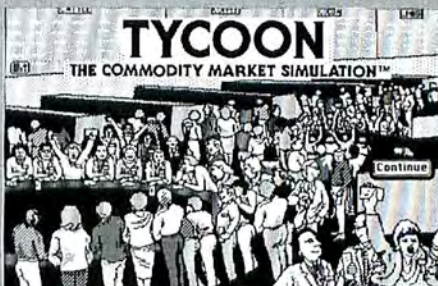
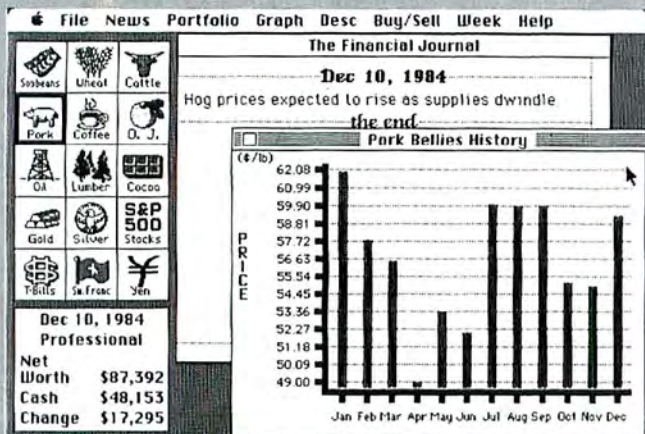
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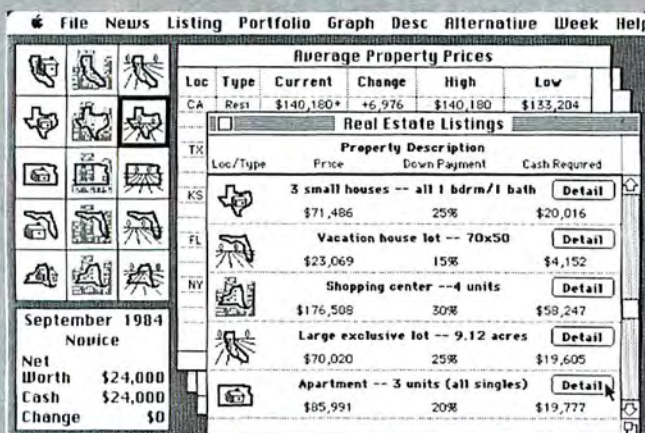
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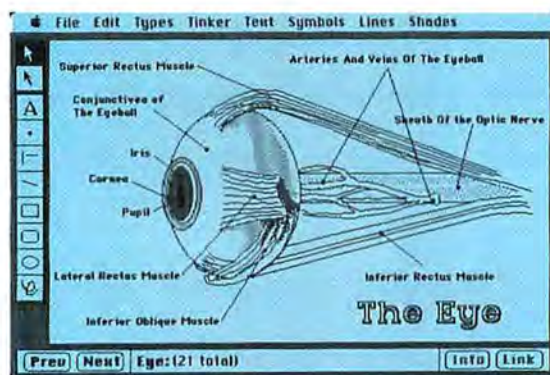
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Filevision: A Data Base in Pictures

Neale McGoldrick

What impresses most people about the Macintosh is not the technical specifications of the machine, but the dynamic use of the new features for innovative programs like MacPaint and MacWrite. Without new software design, the capabilities of the Macintosh would lie dormant and unappreciated. Many of the Macintosh programs released so far have not offered the kind of new direction in software that the Macintosh was meant to encourage, but Telos Software Products' Filevision stands out as a noteworthy exception.

Given the choice, which would you rather do: type a series of commands to list the information contained in a data base file, or point to a picture, press a button, and zoom in on the information pertaining to the picture? In true Macintosh style, *Filevision* employs the second method. Created on the concept of a visual data base, the program takes advantage of the Mac's graphics capabilities and offers a completely new way to organize data. Although *Filevision* is somewhat limited as a data base manager, it allows people to design creative, personalized files, and is certainly more fun to use than a traditional data base program.

To appreciate *Filevision*, you must begin with a visual problem. For example, what will your garden look like on the 15th of June, the day of your daughter's wedding? With *Filevision*, it is possible to draw a diagram of the garden and enter data about each plant (see Figure 1). The program then searches through the data base and highlights all the plants that are in bloom in mid-June (see Figure 2).

Using this visual map for reference, you might decide to buy an additional rosebush, transplant the azaleas, or uproot some forsythia to make sure the garden is in bloom with flowers of a particular color. Alternatively, you might like to know which plants grow over three feet high, where all the flowers of one color are growing, or what areas of the garden need to be





fertilized during a particular month. You can even "hide" the plants not in bloom in a given season to get an accurate view of the garden at different times of the year.

Filevision is of greatest value for keeping track of objects whose visual information is important. For simple information-tracking tasks, it probably isn't worth the trouble to design and maintain a data base consisting of visual and written information, particularly if the visual elements change frequently. The program's strength clearly lies in its ability to track information about objects (like gardens or floor plans) that do not change much from day to day.

Filevision's creators have suggested through the company's advertising that people could use the data base to keep an inventory of a wine cellar. However, for such an application, the data and the visual objects would both have to be modified each time a bottle of wine was added or removed. Changing a *Filevision* drawing every few days would probably be more work than most people would want to do. As a result, it is not likely that the program will be of much use to people who manage constantly changing inventories, either in homes or in businesses.

Creating a Data Base

Creating files with *Filevision* is relatively easy using the menus provided. The tutorial included with the documentation is quite good, and even someone who has never worked with a traditional computer data base should be able to master the program in an afternoon.

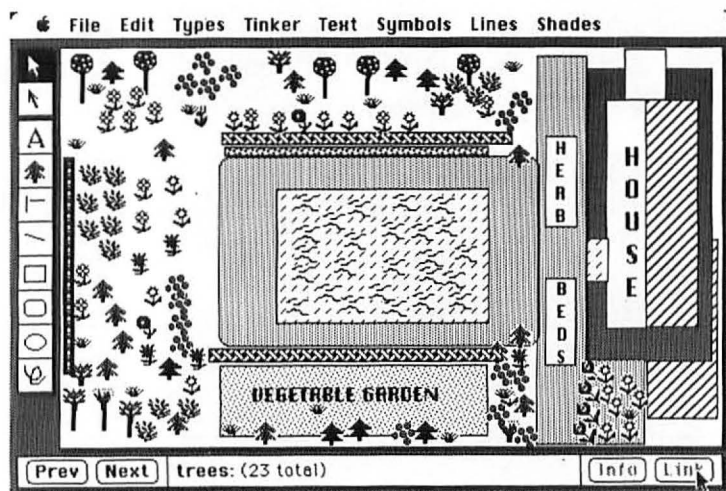


Figure 1
A view of a landscape created with *Filevision*. Information about each of the objects shown in the drawing is kept in the program's text data base.

There are four levels in the *Filevision* hierarchy: files, types, objects, and fields. Each file consists of one screen of visual information (approximately the size of the *MacPaint* screen) and the data base that refers to the screen. Objects in a file can be divided into 16 types of information. You might, for example, choose to organize the garden into trees, shrubs, and flowers by making each kind of plant a different type. A file can contain a maximum of 999 objects. Each object can have up to 32 fields of information (for example, Latin name, size, color, and bloom date), but the total text in all fields related to the object is limited to 2000 characters. The maximum size for one file is 132K; however, it is possible to link objects in one file to additional files, so that hierarchies of data can be organized and stored. The limit for a set of interconnected files is the amount of storage space on your disk.

The first step in working with *Filevision* is to sketch the visual data base—in this case, the background of the garden. Sketch in the house, the walks, and the pool, and then add successively more detail (see "How to Draw Data" for details about *Filevision*'s drawing tools). Once the background is finished, add the trees, shrubs, and flowers by selecting "Add another" from the Types menu. For example, if "tree" has been selected as a new type, each visual element added to the picture will be considered a tree whether it looks like a tree or not.

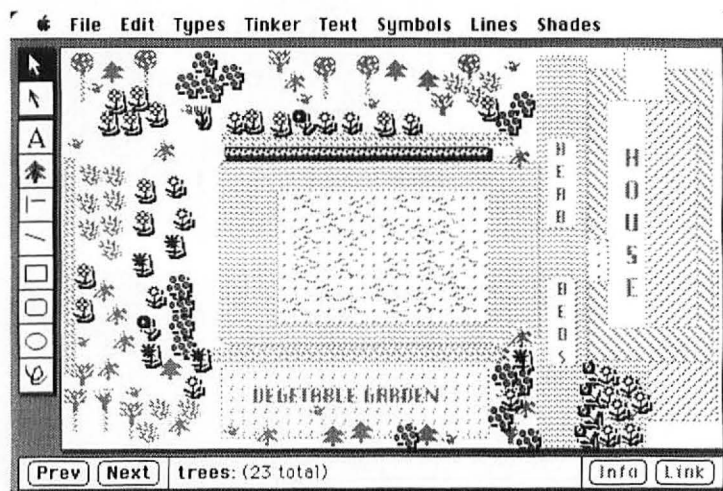


Figure 2
A view of the garden with the flowers blooming on June 15 highlighted. When specific objects are highlighted, the rest of the images fade to gray.

To assist in the placement of specific objects, *Filevision* offers an array of symbols that can be dropped into place much like pasting objects from the Clipboard (see Figure 3). Using these symbols, you might begin sketching a data base by entering each plant as a dot, just to mark its placement. You could later add detailed drawings of the plants to replace the dots.

Moving objects around on the screen with the mouse is simple. Moreover, "transplanting" a rose bush from a far corner to a more prominent place can be accomplished without affecting the information in the data base. If you want to modify a category, it is also possible to transfer objects from one type to another by pressing the Shift key.

Once a type has been designated, it is an easy matter to enter information about the objects into the

data base (see Figure 4). You use the mouse to set up the location and spacing of each of the fields. The size of a field can range from two letters to a full page.

Reviewing and sorting data with *Filevision* is also easy. To determine which flowers will be in bloom on the 15th of June, you select "Highlight some" from the Tinker menu, and then indicate which bloom period you want to look at using the "Highlight some" screen (see Figure 5). Any four of the fields in the data base can be cross-referenced for highlighting. With the garden example, you could instruct the program to show you all the tall, white plants on the north side of the garden that will be in bloom on June 15.

Printing

In addition to showing images on the screen, *Filevision* lets you print out a picture of the screen (much like a "snapshot" in *MacPaint*). The program also prints out a list of all the data entries for a particular object, such as trees, or a list of data for selected objects that you have grouped together based on specific criteria, such as just evergreens (see Figure 6).

Filevision also prints labels for mailings or other purposes. You might, for example, print out the Latin name and age of each tree, or create labels with watering instructions to put on the plants in different sections of a vegetable garden (see Figures 7 and 8).

(continues on page 67)

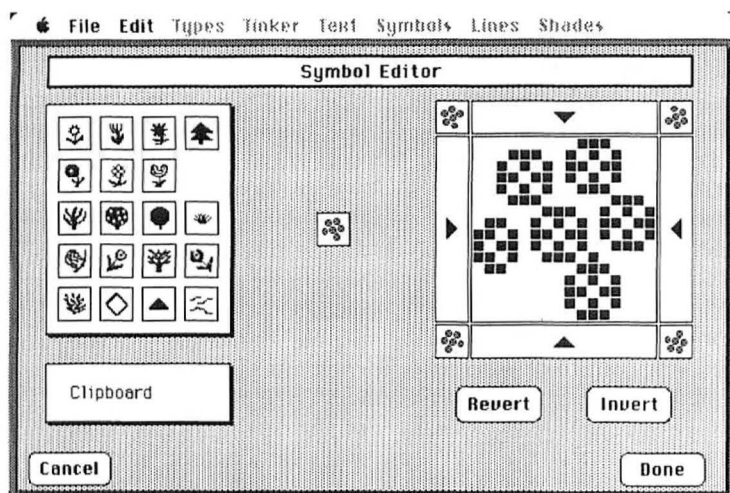


Figure 3
The Symbol Editor screen. The 20 symbols for a file are shown on the left. The currently selected symbol is shown enlarged on the right.

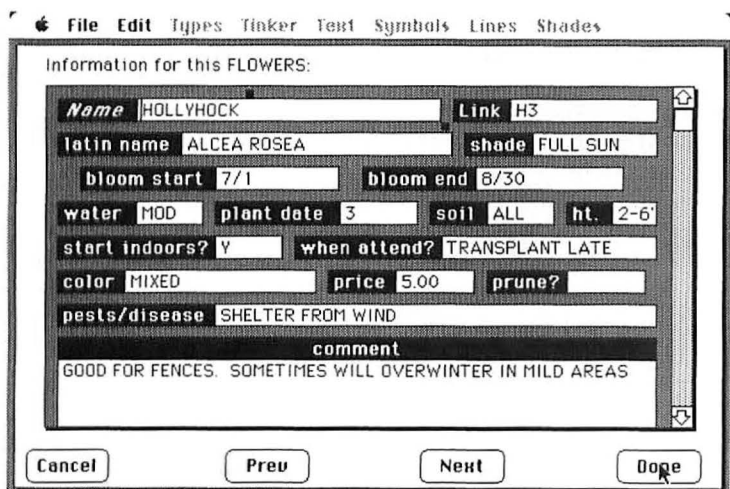


Figure 4
The Filevision data entry screen. This screen shows the information for one flower in the garden. The placement and size of the fields can be changed at any time.

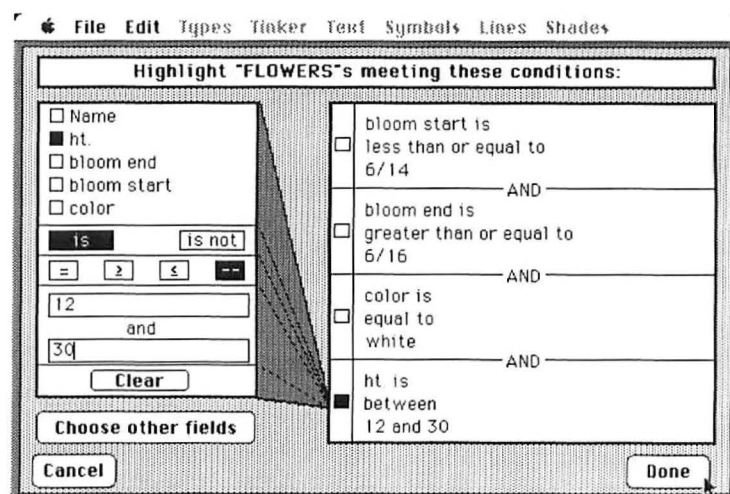


Figure 5
The "Highlight some" screen. You can set up to four criteria for highlighting an object. This example specifies that all tall, white flowers in bloom on June 15 be highlighted.

How to Draw Data

Since the purpose of *Filevision* is to include visual information in a data base, it is necessary to begin with useful and accurate graphics. Undoubtedly, "clip art" screens will be developed for *Filevision* (such as the map of the United States included with the program), but for most purposes, people will have to create their own *Filevision* graphics. If you are familiar with *MacPaint*, you may find *Filevision*'s drawing tools cumbersome at first, but with a little practice you can make satisfactory images without mastering the skills of drafting.

The first step in creating a *Filevision* drawing is to lay out the background. Once the background is sketched in, you add objects. You can create the background with the drawing tools from the toolbox, with *Filevision*'s symbols, or with fonts. If your startup disk includes Cairo or another pictorial font, you can place these images in your *Filevision* drawings. Be sure that any other startup disks you insert contain the same fonts, or the appearance of the images will change.

Because *Filevision* interprets the background as a whole, it does not matter how the images are entered. You can add lines and shapes freely in any combination. Like the images in a *MacPaint* drawing, *Filevision* images can be manipulated at any time. When you click on the edge of an image it is selected, and the program places markers at the corners and center. The markers may seem foreign at first, but they work exactly like selected images moved from *MacPaint* to *MacWrite*. Once an image is selected, you can manipulate it

in a variety of ways. You can enlarge, reduce, or align images, or you can add or change patterns.

People who use *MacPaint* may initially find *Filevision* unwieldy, but the program's drawing tools are really quite serviceable. If you are accustomed to drawing with *MacPaint*, you will immediately notice that *Filevision* lacks an eraser. The easiest means of erasing is with the Undo command. However, once an image is beyond Undo, you have to highlight the image and clear it from the screen to get rid of it. Images must be erased entirely—it is not possible, for instance, to draw a rectangle and then erase part of it, although it is possible to shorten a line. One alternative to erasing with Undo is to cover an area with a borderless white box. This technique works particularly well for the background, where images need not be highlighted. But the white box erases objects only superficially. Even though the white box appears to cover up objects, the "covered" objects will appear when they are highlighted.

Once the background is in place, you select new categories and place objects, which are related to data in the data base, on the screen. On a map, for example, you might mark service stations. As you add service stations, you type their names below the drawing area so the data base can keep track of the information for each one. You can enter more data later for each station using the Info box.

Filevision's symbols are the simplest means of placing images on the screen. What is more, they are the only means the program offers for working

in an environment similar to *MacPaint*'s FatBits. The process of modifying symbols is further facilitated by arrows on the four sides of the edit window which let you position the symbol in the box. Indicators in the four corners of the edit window let you flip, rotate, and invert the symbol. You can modify symbols at any time, even after you've entered data for the drawings. Remember, though, that any change you make in a symbol's edit window will change all the corresponding symbols on the screen to the new shape.

Drawing objects is no more difficult than drawing images for the background. It is necessary, however, to designate just what constitutes an object in the file. In one file, a house may constitute an object and be viewed in its entirety. In another file, the roof, windows, and other components may need to be viewed as separate objects, each referring to different information in the data base. *Filevision* distinguishes a new object each time you begin drawing a new line or geometrical shape. To connect several objects so they are viewed as a single object, hold down the Shift key while you draw.

Adding text to a *Filevision* drawing is very similar to adding text in *MacPaint*. The fonts available are determined by the fonts on your startup disk, which may or may not be the *Filevision* disk. Removing some fonts from your disk with the Font Mover is a practical means of retaining storage space. You can select text and move it around in the drawing, but the text cannot be edited. To make corrections, you must

delete the text with the Clear command and retype it.

The order in which you draw objects is remarkably flexible. It is possible to begin the background, add objects, and then complete the background. You can also change objects without recreating the related information in the data base. For example, you might begin by representing all the herbs in the garden with the same dot marker. Next, you could enter the data base information. Then if you wanted to highlight only the parsley, you could replace the symbols representing parsley with a new design, so the herb remained distinct from the others at all times.

Storing Templates

Since it takes time to create a good graphic design for a *Filevision* application, people will probably want to reuse the maps and other graphics they create. You can store individual images in the Scrapbook as easily as you store them in the *MacPaint* Scrapbook, but you cannot store the full screen image. Unfortunately, the program does not let you transfer images from *MacPaint* to *Filevision* via the Scrapbook. You can, however, move an image drawn in *Filevision* to *MacPaint* with the "snapshot command" (⌘-Shift-3) to create a *MacPaint* image based on the file.

The table "MacPaint vs. *Filevision*" compares the *Filevision* drawing tools with *MacPaint*'s tools. A few enhancements might make *Filevision* more fun to work with, but most people will realize that simplicity and clarity need to be the hallmarks of a visual data base system, and in that respect, *Filevision* is more than adequate.

Linking Files

Because the drawing in any one file is limited to the size of the Macintosh screen, the only way to expand the visual information is to link files together. With the garden example, you could begin with a general sketch of a piece of property and link other files that show close-up layouts of an apple orchard, a vegetable or flower garden, or a grove of trees. From these layouts, you could further link files that showed each bulb in a border of flowers or every herb in an herb bed.

The data base of each file includes a field called "link" for connecting one file with another. Once you enter the correct links into the data base, you need not remember the names of the related files. In true Macintosh fashion, to open the correct file it is only necessary to click on the word "Link," which is always displayed on the screen (see Figure 7).

A Few Drawbacks

Despite its enticing format, there are obvious limitations to *Filevision*. Some of the limitations result from the constraints of the 128K Macintosh for which the program was designed. *Filevision* is a revolutionary program and will no doubt be modified and improved as people discover new applications, and as software developers create companion programs and templates.

TREES AT APRIL HILL FARM					
Name	Latin Name	Height	Width	Shade	Soil
Cedar	Cedrus atlantica	60	30	med dens	rich, drained
Chestnut	Castanea mollissir	50	50	dense	rich, drained
Crab Apple	Malus	15	15	med light	rich, drained
Dogwood	Cornus florida	25	15	light	drained
English Walnut	Juglans regia	60	30	med dens	drained
Red Oak	Quercus rubra	75	50	med	drained acid
Saucer Magnolia	Magnolia soulangea	25	25	light	moist drained
Sugar Maple	Acer saccharum	75	50	med dens	moist
Weeping Willow	Salix babylonica	40	40	medium	moist
White Fir	Abies concolor	75	50	dense	moist
White Pine	Pinus strobus	100	30	med dens	drained
White Spruce	Picea glauca	75	50	dense	drained

Figure 6

A printed report. You can print a report of information about the objects in your drawing. The report shown here lists information about the trees in the garden.

You cannot reasonably expect *Filevision* to replace traditional data bases any more than you can expect *MacPaint* to replace watercolors. You should be aware of the following limitations:

- The program does not calculate numeric data.
- You cannot preview report formats on the screen before you print the reports.
- The program has no Save As option for leaving an original file intact while a new file is created from the original. The best way to modify a file while still preserving the original is to copy the file by selecting Duplicate from the File menu on the desktop, and open the duplicated file to make changes.
- You cannot cut and paste an entire graphic image for future use, nor can you cut and paste the data entry form for future use. Copying the entire file is, again, the only way to reuse a graphic element.
- You cannot move an entire data file to another program; only one field can be moved at a time. You can use the Note Pad to "collect" data to be moved, but there ought to be a more efficient way.
- The program does not generate an image based on data. For example, adding information in the data

file that a plant was moved to the greenhouse for the winter does not cause the image of the plant to move automatically from the garden to the greenhouse.

- The program does not automatically recognize data relationships. Placing a flower in the herb bed, for example, does not cause the flower to be viewed as an herb.

- Many handy *MacPaint* drawing tools are absent, particularly the ability to flip or rotate images and to edit patterns (see "How to Draw Data" and the table "MacPaint vs. *Filevision*").

- The program does not search for data in more than one type at a time. If, for example, you want a list of all the plants that need fertilizer in November, you

(continues on page 70)

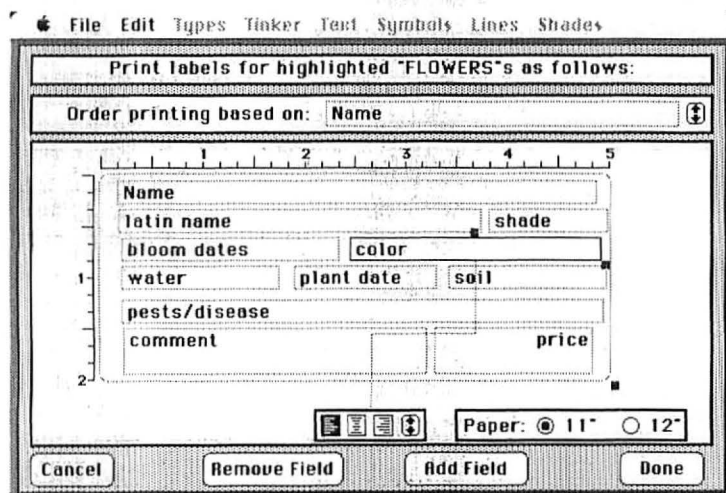


Figure 7
The "Print labels" screen. With this screen you design the format for printed labels. Note the rulers on the top and bottom of the design area, which help determine the placement of information.

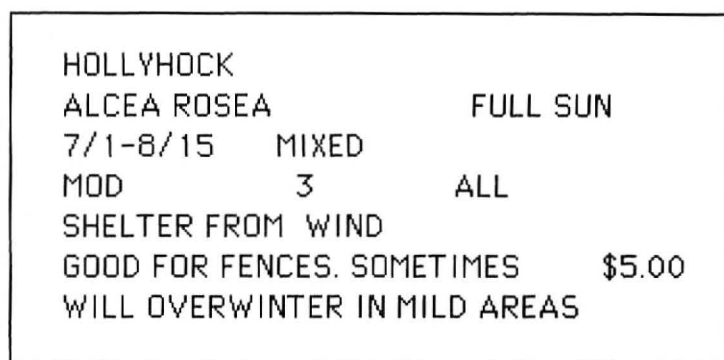


Figure 8
A printed label for a flower. Other kinds of labels, such as address labels for mailings, can also be printed.

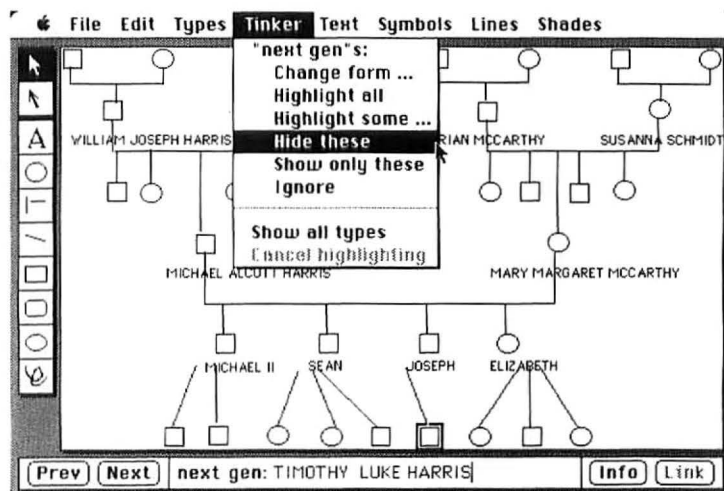


Figure 9
Genograms are an interesting application for *Filevision*. Portions of the family tree showing different generations can be hidden or highlighted. The program's Link option can connect files containing graphics and data for other generations.

MacPaint vs. Filevision

MacPaint	Filevision
Paintbrush	No brush shapes or brush mirrors exist; four line widths can be used instead.
Pencil	The narrow line width works like the pencil but can't be used as an eraser. "FatBits" is available only for creating symbols.
Paint Bucket	Patterns can be added to objects either while they are being created or afterward. Filling in patterns in freehand shapes is cumbersome. Pattern selection is limited, and patterns cannot be edited.
Spray Paint	The program lacks a spray can equivalent. Shading is not possible.
Eraser	There is no eraser. Selected objects can be removed with the Clear and the Undo commands. Objects can be covered with white. Lines can be shortened or lengthened, and shapes can be manipulated.
Lasso, Marquee	All objects can be selected and moved, reproportioned, reshaped, and copied to the Clipboard or the Scrapbook. Encircling objects with a lasso tool is not necessary. A large arrow selects multi-part objects; a small arrow selects portions of multi-part objects.
Geometrical Shapes	These tools are similar to <i>MacPaint</i> 's shapes. There is a grid pattern to facilitate object placement, but no functioning grid like the one in <i>MacPaint</i> .
Flip/Rotate/Invert	Possible only with symbols.
Show Page	The picture is limited to the size of the screen window.
Brush Mirrors	Not available.
Edit Pattern	Not available.
Repeating Objects	Uses copy/paste. Symbols repeat infinitely.
Trace Edges	Not available.
Fonts	All styles are present except Outline. Sizes range from 9- to 24-point. Font selection is based on the fonts available on the startup disk. Editing is limited, like editing text in <i>MacPaint</i> .
Save File	A dialog box prevents accidental file loss. No Save As option exists. A new file erases the previous version. Making backup copies is essential.
Snapshots	<i>MacPaint</i> "snapshots" (⌘-Shift-3) are possible, and screen shots can also be printed from the File menu (Print Display).
Scrapbook	Accessible for other <i>Filevision</i> files. Does not boot <i>MacPaint</i> Scrapbook files, even if <i>MacPaint</i> is used as the startup disk.
Desk Accessories	Accessible.
Data Protection	Limited. Never turn off the computer without quitting <i>Filevision</i> .

MacPaint vs. Filevision

This table compares the drawing tools in Filevision and those in MacPaint. Some of the MacPaint tools are less flexible in Filevision because Filevision is object-oriented (like MacDraw). You can't simply spray patterns of dots on the Filevision screen; the geometry of the shape and its attributes are stored in memory; rather than the individual dot patterns as in MacPaint.

Name	MARY MARGARET MCCARTHY	Link	G3
BIRTHDATE	8/13/02	PLACE	BOSTON MA
SEX	F		
MOTHER	SUSANNA SCHMIDT		
FATHER	DAVID BRIAN MCCARTHY		
OLD ADDRESSES	BRAINTREE MA, GUILFORD CT, SUMMIT, NJ		
DEATH DATE	4/11/81	AGE AT DEATH	79
CAUSE	heart attack		
SCHOOL NAMES	GUILFORD PUBLIC SCHOOLS		
COLLEGE NAME	BARNARD	DEGREE YR	24
GRAD SCHOOL	N	GRAD DEGREE	N
OCCUPATION	LEGAL SECRETARY		
BUSINESS NAME	WOODWARD, KELLEY AND BANACEK		
KNOWN ADDRESS	413 WEST 88TH ST, NEW YORK, NY		
MARRIED TO	MICHAEL ALCOTT HARRIS	DATE	7/4/28
1ST CHILD	MICHAEL II	BORN	9/3/29
2ND CHILD	SEAN	BORN	2/13/31
3RD CHILD	JOSEPH	BORN	4/18/33
4TH CHILD	ELIZABETH	BORN	11/19/35
2ND MARRIAGE	N	DATE	N
COMMENT Named for paternal aunt. Edited college newspaper. Class agent for Barnard College. Volunteer leader for the Girl Scouts. Worked for the political campaigns of Fiorello LaGuardia. Wrote an articles on cost-cutting for homemakers during the depression. Collected Chinese paper cuts.			

Figure 10

An example of the data kept for one person on the family tree.

(continued from page 68)

have to search for the data separately for the trees, the shrubs, and the flowers. It is possible to change all three types to one new type for this search, but you cannot revert to the original categorization.

- You cannot select data on an "either/or" basis, which means that you cannot highlight all the plants in the garden that are either white or yellow.

- The program prints labels and reports in only one size and style—12-point Geneva (screen shots, however, print text in the font shown on the screen).

- You have to reinsert the original *Filevision* disk each time you reopen a file from the desktop. Other copy-protected programs, such as *Microsoft Multiplan*, only require you to insert the original disk each time the computer is turned on.

The Future of Filevision

Despite its limitations, there can be no question that *Filevision* is an important addition to Macintosh software.

One of the most popular applications of *Filevision* for the home is likely to be a genogram, or family tree (see Figure 9). *Filevision*'s unique capabilities are particularly suited to combining the visual structure of a family tree with detailed information about each family member (see Figure 10). Linking files is particularly valuable in a genogram, making it possible to go from one generation to another with a click of the mouse button.

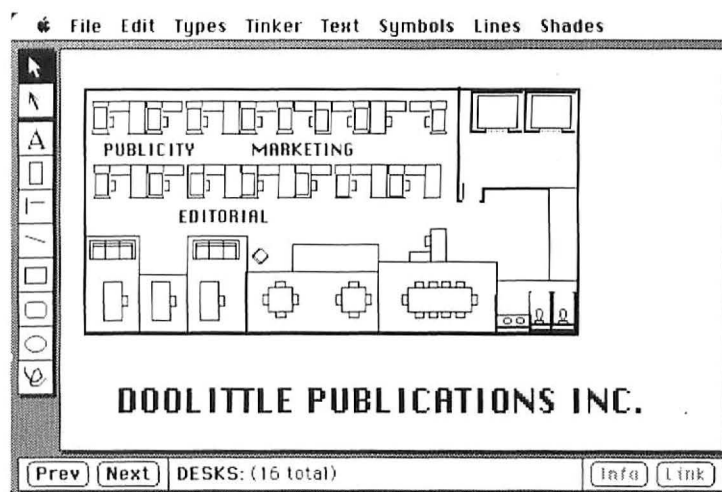


Figure 11

An office floor plan. Office floor plans and organization charts are logical *Filevision* applications. The objects in this plan were created from a font of office furniture that comes on a clip art disk from Hayden Software. Note that even though clip art images designed for MacPaint cannot be used in *Filevision*, the fonts that come on some clip art disks can be transferred with the *Font Mover*.

An obvious business application would be an office layout like the one shown in Figure 11. Information could refer to employees at a particular location or to office equipment such as telephones, computers, or photocopiers. Using the "Highlight some" feature you could then find all the computer terminals hooked up to a mainframe, or everyone in the accounting department who plays raquetball. The office layout shown in Figure 11 is noteworthy because it was created with a pictorial font available from Hayden Software. "Clip art" designed for *MacPaint* cannot be pasted into *Filevision*, but fonts consisting of pictures can be used in sizes up to 24 points.

Another application for *Filevision* is maps. The map of the bicycle race illustrated in Figure 12 indicates the general route of the race. It can be linked to detailed maps of each of the checkpoints (see Figure 13). Using *Filevision*, it would be possible to create two sets of maps: close-up views of the checkpoints for the people in charge of assigning tents, preparing

medical kits, and other planning details; and copies of the main route for the race contestants.

In many ways *Filevision* in its current form must be viewed as an embryonic product, like the Macintosh itself. The program breaks new ground and paves the way for Telos and other companies to build on discoveries that are made as Mac owners come up with more challenging ways to use the program. □

◆◆◆◆◆◆◆◆◆◆ Neale McGoldrick
is the author of *Applications for MacPaint*,
forthcoming from Addison-Wesley.

◆◆◆◆◆◆◆◆◆◆

Filevision
Telos Software Products
3420 Ocean Park Blvd.
Santa Monica, CA 90405
800/554-2469, 800/368-3813 in
California
List price: \$195

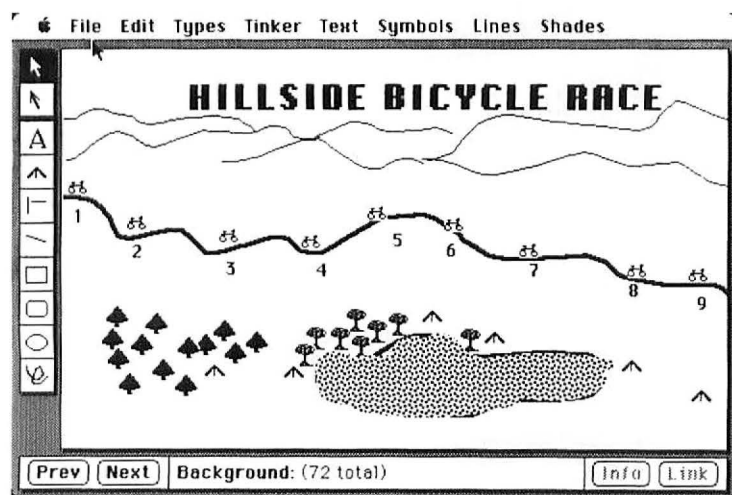


Figure 12

Maps are one of the most obvious uses for *Filevision*. In this case the plan for the bicycle race was laid out in one file, and details of each checkpoint were drawn in a linked file.

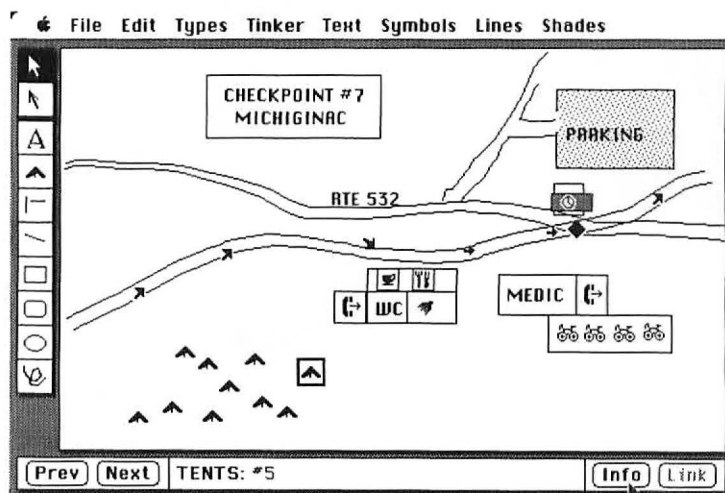


Figure 13

A view of Checkpoint 7 of the bicycle race. This drawing provides an example of a linked file showing details about information contained in another file.

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MACHINES CORPORATION.
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Circle 72 on reader service card



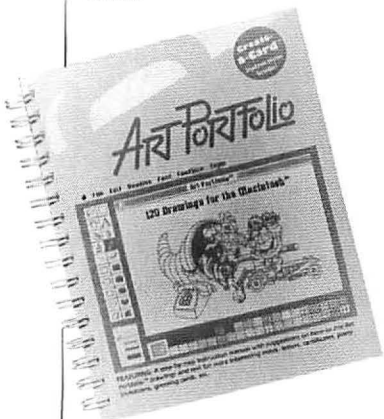
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Two

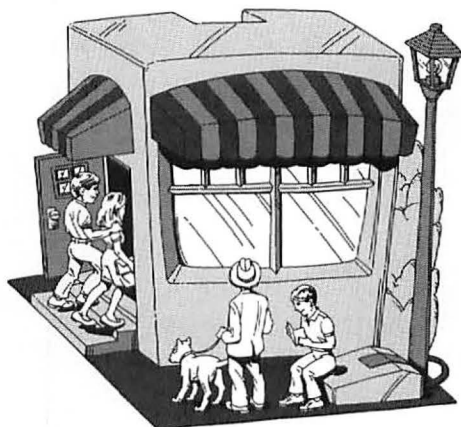
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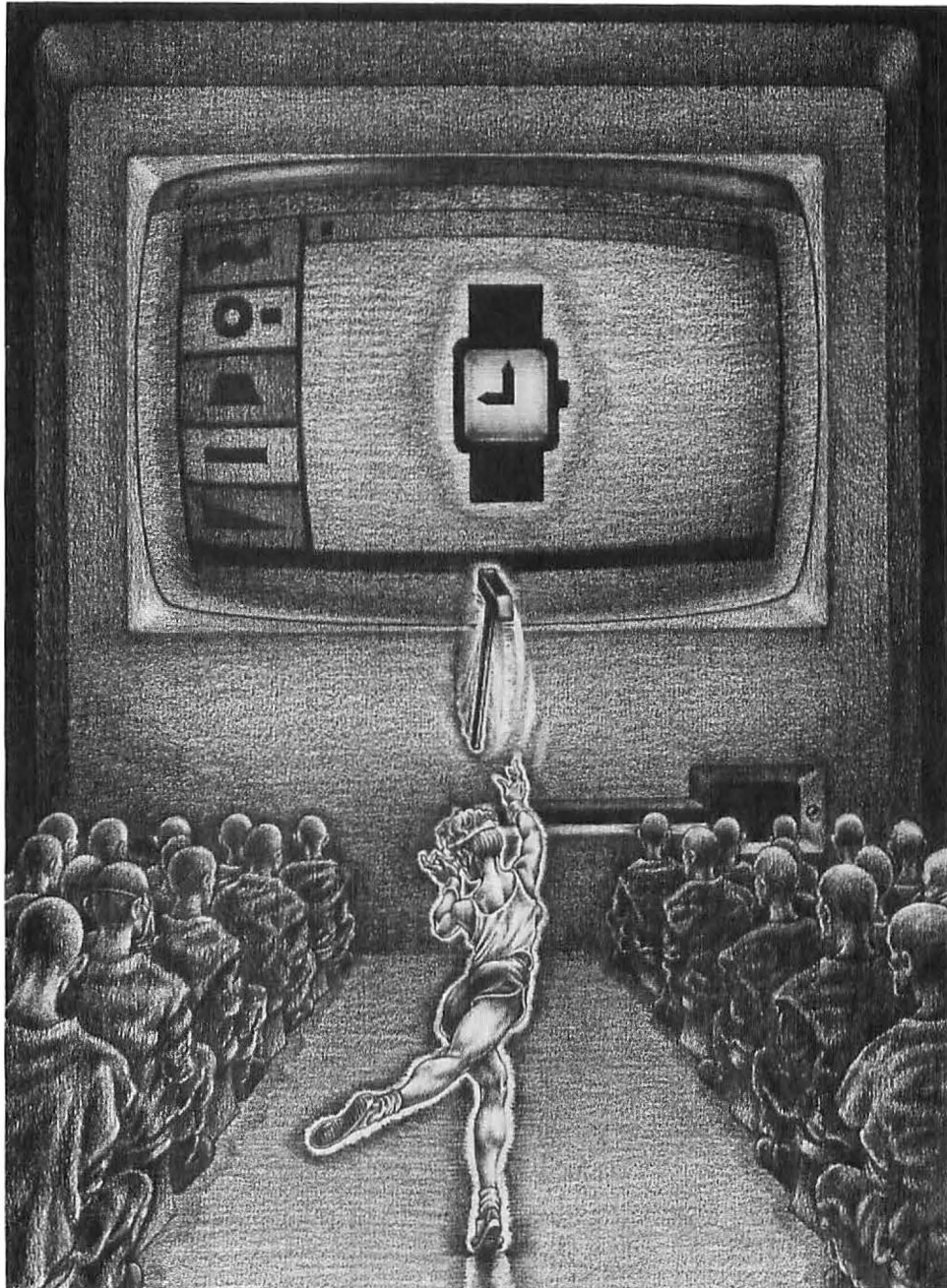
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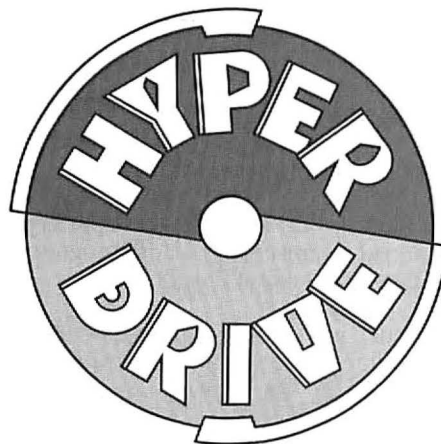
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Covering All the Bases

Jim Heid

People have been clamoring for data base management programs that run on the Mac since the machine was first introduced. Now several data base programs are available that take advantage of the Mac's unique graphics capabilities and user interface. Deciding which programs suit your needs isn't easy, however. This summary of some of the first data base programs available for the Mac will give you some guidelines for making informed buying decisions.

Which data base management program is right for you? One that stores graphic images as well as text? One with statistical features to help you spot trends in data? A relational system that can join separate but related files? Or a simple file manager to keep track of your coin collection?

To help you decide, this review looks at five data base management systems: *1stBASE*, *pfs:File* and *pfs:Report*, *DB Master*, *Main Street Filer*, and *Over-VUE*. Although each package does the same thing—lets you store and retrieve information—each does it in its own way, and each has its strengths and weaknesses.

"Data Bases at a Glance" shows the vital statistics of each program reviewed: data entry, file management, and report generation features. If you have never visited the data base management world and don't know the lingo, read "A Data Base Primer." Don't base a purchasing decision solely on price or specifications such as maximum record length, however. Consider other factors, such as the following:

- **Ease of use.** A powerful data base manager is worthless if it's awkward and difficult to use.
- **Report-generating features.** The program should put your information on paper the way you want it.
- **Data compatibility.** The program should be able to transfer data to and accept data from other applications, such as *Multiplan* or *MacPaint*, and not isolate itself from the rest of the world.

- **Use of the Macintosh environment.** You shouldn't have to type anything except the actual information you're storing. If the program makes you type commands or search characters, such as a greater-than symbol (>) or an equals sign (=), it does not take full advantage of the Mac's user interface features like pull-down menus and dialog boxes.

With these factors in mind, let's go exploring.

1stBASE

A product of DeskTop Software Corporation, *1stBASE* is the only relational data base manager reviewed here. That feature, plus easy file design, data entry, and report-generating features, make this program one of the best.

Figure 1 shows how to design a new file with *1stBASE*. Instead of simply typing the number 25 for a field length of 25 characters, you click the insertion pointer in the Format text box, and then type 25 characters—Xs, Zs, periods, or whatever. The field's length is shown just below where you're typing and increases or decreases with each character typed or deleted.

1stBASE forces you to use field names of 12 characters or less, so a field name such as "Street address" is 2 characters too long. And you have to remember to click the Save Field button after you have defined the last field in a file but before you click the Finished button. If you click the Finished button without remembering to save the last field, the field will be sent to oblivion.

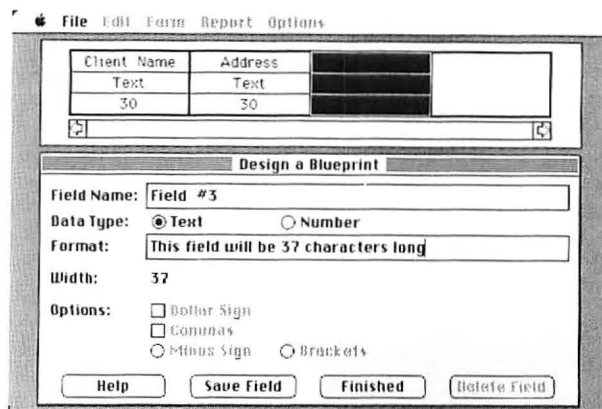
Data Entry and Retrieval

1stBASE's data entry system works well. To add records, choose Add Records from the Form menu. A data entry form appears, with the first field selected. You type your data, moving from field to field by clicking the pointer in the desired field or by pressing Re-

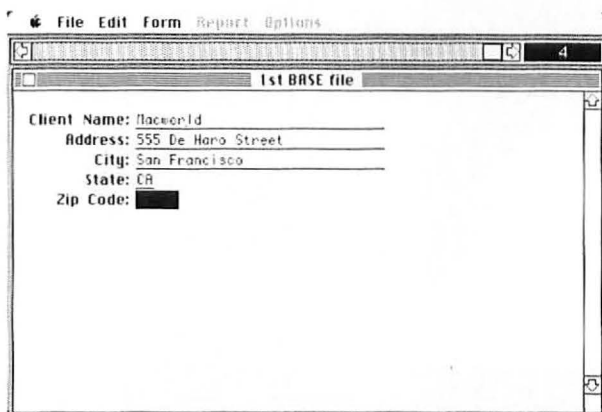


Figure 1

Designing a 1stBASE data base. The Client Name and Address fields have been specified; now a third field, City, is being created. Notice how the number of characters in the Format text box denotes the field length.

**Figure 2**

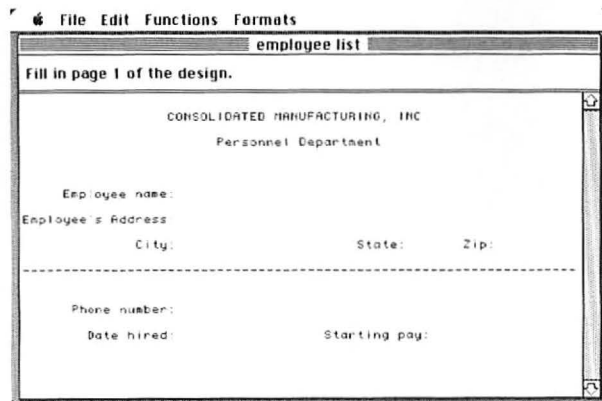
1stBASE data entry. The Zip Code field is about to be filled. The scroll bar under the menus lets you scroll through your data base; the number to the right of the scroll bar indicates the current record.

**Figure 3**

1stBASE report design. This design creates a report in which the employee's name, address, city, state, and zip code are printed, but only for employees whose hourly wage is less than \$10 and whose work week is longer than 20 hours.

**Figure 4**

Designing a pfs:File data base. You position fields where you want them by adding or removing carriage returns and spaces.



turn (see Figure 2). You store a record and clear the data entry form by choosing Add Records, pressing Shift-Return, or clicking the right arrow in what's called the record scroll bar.

1stBASE lets you browse through your data base one record at a time by clicking the left or right record scroll bar arrows. You drag the scroll box left or right to move more than one record at a time.

You search for a specific record by choosing Find Record from the Form menu, selecting the search field (by clicking its name), and then typing the text you're searching for (or just a portion of it) in either uppercase or lowercase letters. 1stBASE searches the file and displays the first matching record.

One feature about 1stBASE annoyed me, however. The program begins a search with the record that's currently displayed, rather than the first record in a file. If, for example, record 10 is displayed, the program doesn't search records 1 through 9. To force 1stBASE to start searching at the beginning of a file, drag the record scroll box to the far left side of the scroll bar.

When you delete a record, data contained in the record is displayed in italic rather than plain text, signifying deletion. You can bring the record back by choosing Resurrect Record, or delete it forever by choosing Compress File.

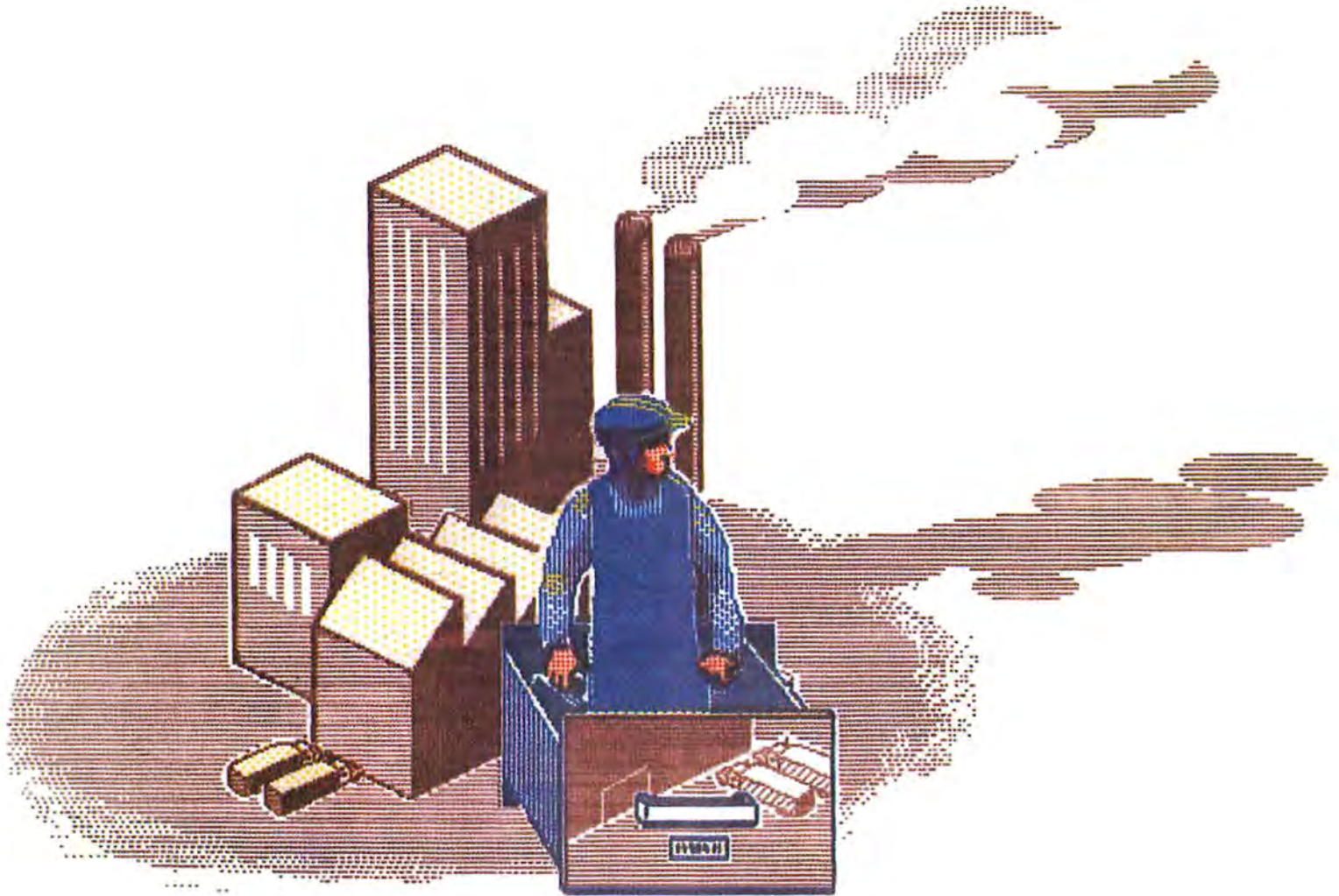
Using the File menu's Sort File By command, you can sort a file on any one field, in either ascending (A-Z) or descending (Z-A) order. If these searching and sorting features aren't enough, you can get more sophisticated sorts using the program's report-generating features.

Because 1stBASE is a relational data base manager, you can join two different files to create one large file containing the data in both. The only requirement is that the two files contain one identical field.

Printing Reports

1stBASE's report-designing features are sophisticated yet easy to use. You specify the fields to be included in the report by clicking on the field's name (see Figure 3). You can also specify that fields be grouped and sorted according to certain criteria, and you can use relational characters, such as greater-than, less-than, and equals, to specify that records be selected only if certain conditions are met. The example in Figure 3 uses these characters to print a report containing information about all employees who work more than 20 hours per week and earn less than \$10 per hour.

1stBASE lets you use the report-generating commands and features to create a new data file. Using the report format shown in Figure 3, you can produce a new file containing just the information about employees who meet the search criteria. You can then work with the smaller, more specific file, adding and deleting records, designing reports, or creating an even smaller file containing just the employees who meet other specified criteria.



1stBASE Report Card

1stBASE takes advantage of the Mac's mouse and user interface features. You don't have to type anything but the actual data you're storing or searching for. And because the program includes many ⌘-key shortcuts, you can save time as you gain proficiency. All menus except the Edit menu include help commands that display clear explanations of *1stBASE* commands and features on the screen. I found only one inconsistency with the usual Mac interface: you can't click the shaded area around a scroll box to scroll a full screen at a time; you have to either click the scroll arrows or drag the scroll box.

Overall, *1stBASE* is first-rate. It's a capable program that can handle demanding data base management chores.

pfs:File and pfs:Report

pfs:File and *pfs:Report* are familiar names in data base management. These programs, from industry veteran Software Publishing Corporation, have been running successfully on the IBM PC and other personal computers for years.

Unfortunately, *pfs:File* and *pfs:Report* don't run as well on the Macintosh. Although the programs get the job done and have features that other data base programs lack, they're more awkward to use than the other programs reviewed here. Basically, they don't take advantage of the Mac's mouse and user interface features as much as they could.

Form Oriented

pfs:File calls a record a form. When you design a new file form, you can place fields in any position on the screen (see Figure 4) and give them names of any length. This feature lets you design data entry forms that resemble their paper counterparts, making data entry less foreign to computer newcomers. But you must remember to end each field name with a colon that's how *pfs:File* knows where a field name ends and your data begins.

Being able to position fields anywhere on the screen is convenient, but the method used to position them isn't exactly Mac-like. You don't click and drag a field name around; to move it down, for example, you have to first click above the field, then press Return until the field is positioned properly. To move a field to the left or to the right, you have to add or delete the spaces preceding it.

A Data Base Primer

Warren Sirola

A data base management system (DBMS) is a general-purpose program used to keep track of different kinds of information. A common DBMS application is maintaining a mailing list, and virtually every DBMS on the market can handle this task easily. Other data base applications range from simple lists to complex inventory and order systems for manufacturing facilities.

A library card catalog is an example of a noncomputerized data base (although many libraries also have computerized versions), and will serve as an analogy to describe the structure of a DBMS. Each card in the catalog contains specific information about a single book: title, author, description, Library of Congress number, and at least one subject classification. Each "card" in a data base system is called a *record*, and each piece of information on the card, such as the book's publication date, number of pages, or a description of the book's contents, is called a *field*.

At least three cards are generally filed in the catalog for every book: one in the title section, one in the author section, and one or more in the subject section. With a data base program, only one electronic "card," or record, resides on disk for each book, but you can look through the records in any order, searching by author, title, subject, or Library of Congress number.

Data Base Features

Whenever you create a new data base with a DBMS, you name the fields in your records in a process called *file definition*. In a mailing list file, for example, the fields are name, address, city, state, and zip code. In an inventory file, the fields might be item name, item number, and cost. In addition to naming the fields, you indicate whether the fields are composed of text, numbers, or both. In an inventory file, the item name field is a text field, and the item number and cost fields are number fields. You also specify how many characters long you expect the fields to be. The name field in a mailing list file might contain as many as 50 characters, while the zip code field never has more than 10.

The ability to specify *attributes* is important in the file definition process. Attributes are used by a DBMS to determine how it should record the data entered. For example, the text or number fields and character length specification mentioned above are common attributes contained in all data base management systems. One handy attribute that can save you considerable typing time is the ability to specify that a field be *replicated* from one record to the next. Two examples of field replication are a single date entered for all sales made on one day, or the same city name entered for all records relating to one geographical area.

Another data base task is entering information into the data base and keeping the information up to date. The process, known as *file maintenance*, is

similar to filling in the blanks on a form. Some programs offer a standard format for entering information, while others let you create a format to fit your particular needs.

Report Generation

The usable end product of a DBMS is a list or a report. Most reports consist of columns of information, with the columns representing the different fields in the data base. The ability to define a column as a *calculated field* is an important report feature. The most common example of defining a column as a calculated field is printing a "Total Price" column (in an order-tracking system, for example), which is defined as the item price multiplied by the quantity ordered.

The reports produced by data base programs differ in the maximum number of levels of sorting and subtotaling. A salary file for a company that has several divisions and many departments within the divisions, for example, would need multiple levels. With a program that offers levels of sorting and subtotaling, you can print a report listing salary totals for an entire company, each division, and each department. The ability to preview reports on screen is a desirable feature, because you can spot errors and correct them before printing a report.

Other Features

One of the products reviewed here, *1stBASE*, has *relational* capabilities. The relational data base approach allows you to combine files with information

about different but related areas into a single file for reporting purposes. A common use for a relational data base is customer tracking. One file keeps track of customers' names, addresses, and other relatively fixed information. A second file keeps track of the orders made by the customers but does not duplicate the information held in the first file. When invoicing time comes around, you can have the program combine the information in the two files into a single, temporary file and print invoices.

Relational capabilities help businesses use disk space efficiently and keep contradictory data from being stored in the data base. If a customer's address is entered only once, for example, it won't be entered incorrectly a second time. To use relational data bases effectively, you need some experience, but they are more powerful than systems without relational capabilities.

Many businesses need to be able to customize their data base management programs. A programming language built into a DBMS allows a programmer to customize menus and automate operations for particular business applications. Programming languages, although not included in any of the programs reviewed here, are especially useful for designing applications such as accounting, inventory, and medical or dental record-keeping systems.

Warren Sirota is a data base consultant in Oakland, California.

The screenshot shows a window titled "employee list" with a menu bar (File, Edit, Functions, Formats). Below the menu bar is a status bar that says "Page 1 -- please choose forms to find." and a button labeled "Find first form". The main area of the window displays a form for "CONSOLIDATED MANUFACTURING, INC. Personnel Department". The form has several fields: "Employee name:" with the value "sm?th", "Employee's Address:", "City:", "State:", "Zip:", "Phone number:", "Date hired:" with the value "84", and "Starting pay:" with the value ">20,000".

Figure 5

A pfs:File search. The search specified here finds all records for employees whose names end with sm(anything)th, who were hired any time in 1984, and whose starting pay was more than \$20,000. Using the question mark (?) wildcard character means that both Smith's and Smythe's records will be found.

pfs:File doesn't require you to specify maximum field lengths. A field begins after the colon and ends before the first character of the next field's name (or at the bottom of the screen if it's the last field in a form). This "free-form" field length eliminates the need to redesign your data base if, for example, you suddenly switch from a 10-character part number to a 30-character one.

Data Entry and Retrieval

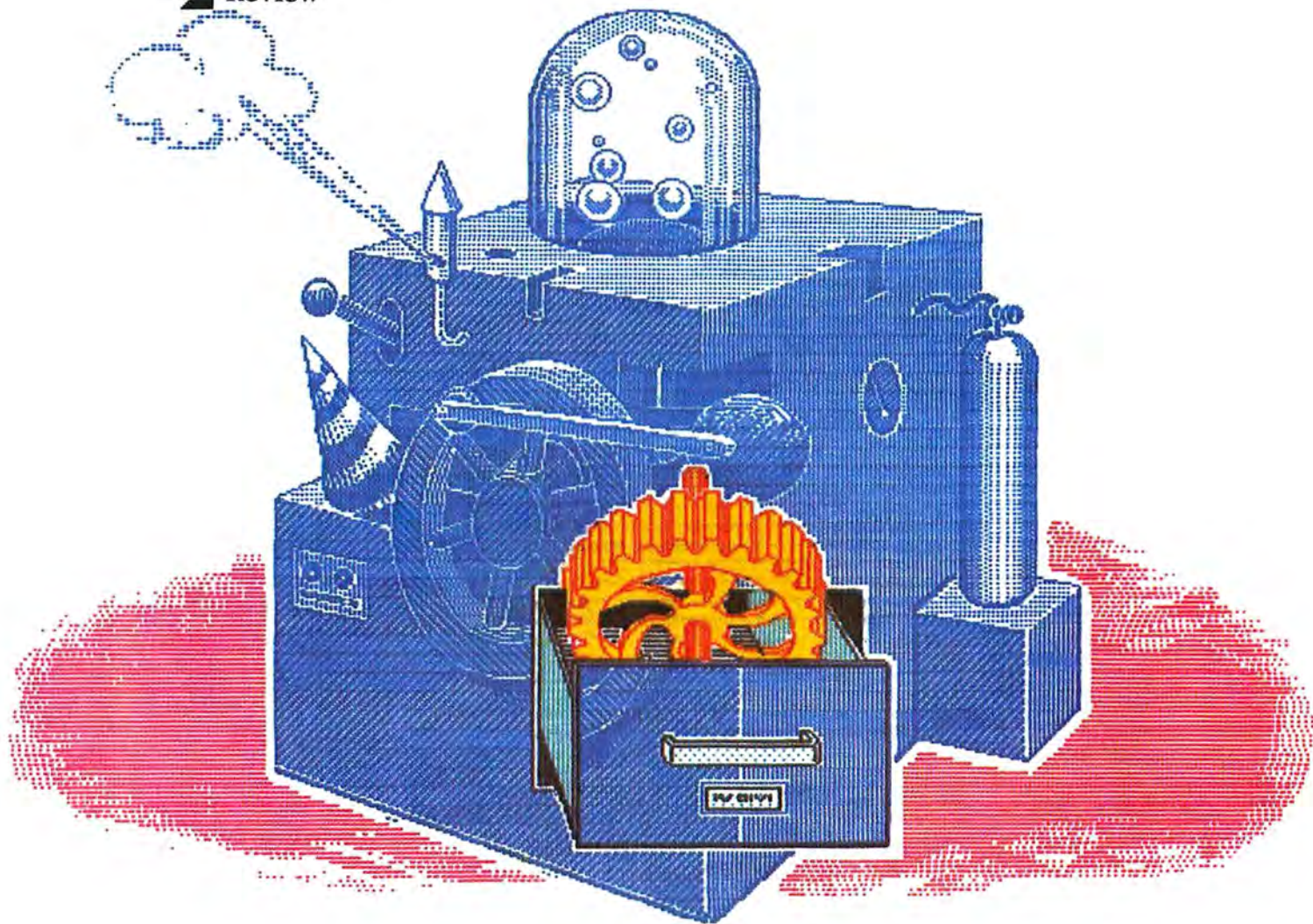
When you enter new records, you advance from field to field using the Tab key or by clicking the pointer anywhere in the remaining fields. And I mean anywhere—the data for each field doesn't necessarily have to begin right after the colon in the field name. When searching or sorting, the *pfs* programs ignore any spaces before the first character.

Browsing and searching for records is similar to entering them. You choose Find Records from the Functions menu, and the familiar data entry form appears. To browse through your data base, click the Find First Form button without typing anything, and the first record will be displayed.

To search for specific records, type what you're looking for in the appropriate fields (see Figure 5). *pfs:File* supports a healthy number of search characters and wildcard characters, but the program makes you type all the search and wildcard characters. It would be easier if you could select them from a dialog box. Specifying the search shown in Figure 5 involved lots of referring to the manual and some head scratching.

Printing Reports

pfs:File has a simple reporting system that prints out mailing labels and simple columnar reports (with each field in its own column). You specify which records to print using the same form-filling technique you use for data entry. You then fill out a second form, using Xs, plus signs, and an S to indicate the fields you want printed and sorted. If the symbols sound cryptic, it is because they are. Fortunately, once you design a report, you don't have to design it again; *pfs:File* lets you store up to eight report formats.



For reports involving math calculations in certain columns, you'll want to use *pfs:Report*. The program can print fairly complex tabular reports, but like *pfs:File*, it makes you type more than you should have to.

As with *pfs:File*, you designate the records to print by filling out the same data entry form, with the same search operators and wildcards. You then specify the format of the report, again by filling out a form (see Figure 6). Like its sister package, *pfs:Report* lets you store up to eight report formats.

Using *pfs:Report*'s arithmetic functions, you can specify that columns be totaled, averaged, and counted. You can also specify a keyword sort, a feature that is especially valuable in a text-oriented data base, such as a list of magazine article abstracts.

Better still is the program's ability to print up to three derived columns, which are computed from information in other columns. Let's say you have a data base of salespeople, with one field containing year-to-date sales. You could compute and print each person's commission by instructing *pfs:Report* to create a new column containing the computed result of the formula you use to figure out commissions. When you want to print the report, the program grabs the value in the year-to-date sales field, computes the commission

using the formula specified, and then prints the value in the derived column. A derived column can contain addition, subtraction, multiplication, and division, and up to two levels of parentheses.

pfs Report Card

I expected higher quality Macintosh versions of *pfs:File* and *pfs:Report*. The programs are powerful. You can design your own data entry screen with *pfs:File*, and *pfs:Report*'s derived column features make it suitable for some math-oriented applications. But the programs could be easier to use. They make you type more than you should have to, and only the Edit menus have ⌘-key shortcuts. Finally, the programs don't adhere completely to Mac editing standards. You can't, for example, double-click on a word to select it, while double-clicking on a field name selects the entire field.

If you need the features that these programs offer, test the programs in a computer store before you buy to be sure that you can live with their idiosyncrasies.

DB Master

Another data base management veteran, *DB Master* has been regarded by many people as one of the best Apple II data base managers. Macintosh owners who knew the program were excited when they heard that a Mac version of this old favorite was in the works.

DB Master is here, and it lives up to people's expectations. Stoneware's feature-packed, lightning-fast program uses the Mac's user interface to the fullest.

Data Entry and Retrieval

You notice the first of *DB Master*'s many features when you design data files. You can choose different type styles and font sizes for your data entry form. Not only can each field name appear in its own type style and font size, the data in each field can too. You can put your name and address field names in Geneva, for example, while the data itself appears in New York (see Figure 7).

DB Master lets you position fields anywhere on the screen. You click the pointer where you want a field, then type its name, which can be up to 63 characters long. You can specify the field's type (character or numeric) and its maximum length using the Field Options menu, but you don't have to. *DB Master* presets all fields to character type and presets their length to the number of characters (up to 30) that will fit on the line in which the field's name appears.

A *DB Master* character field can have up to 3000 characters. Fields using more than one screen line wrap around—you can store and edit long article abstracts, memos, or any lengthy piece of text with the same ease and convenience a word processor provides.

If all this isn't enough, *DB Master* also lets you specify computed fields. A computed field is one that the program fills for you, based on a formula that you specify. In an employee data base, for example, a field might contain each person's year-to-date gross pay. When you supply the necessary tax formula, *DB Master* calculates and displays each employee's net pay.

You can even sort a file by a computed field, which, in the case of the employee data base, gives you a list of employees organized according to net pay. You can have up to 240 characters in each formula and up to 20 computed fields per record. Clearly, this data base manager has a head for figures.

Data entry is easy with *DB Master*. You move from field to field by moving the pointer and clicking, or by pressing the Return key. You store a record and clear the data entry form by choosing Add Another Record or by typing **⌘-A**.

A command called Set Field Defaults saves time and keystrokes when you're entering records that have identical data in some fields. If you're typing a list of all car owners in Los Angeles, for example, rather than typing "Los Angeles" and "CA" repeatedly, you can specify the entries as repeated fields, and they'll appear in every record you add in the session.

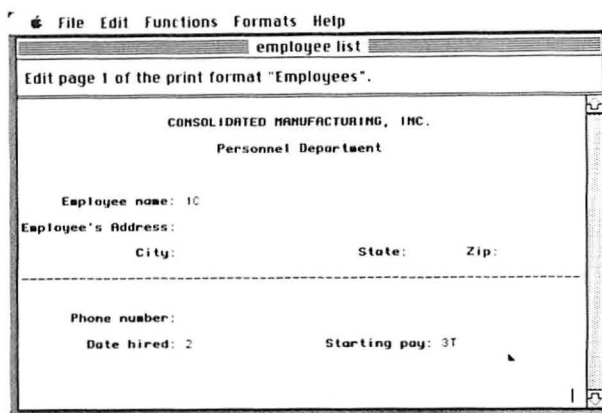


Figure 6
Designing a report with pfs:Report. The report specified here prints the employee's name in column 1, the date he or she was hired in column 2, and his or her starting pay in column 3.

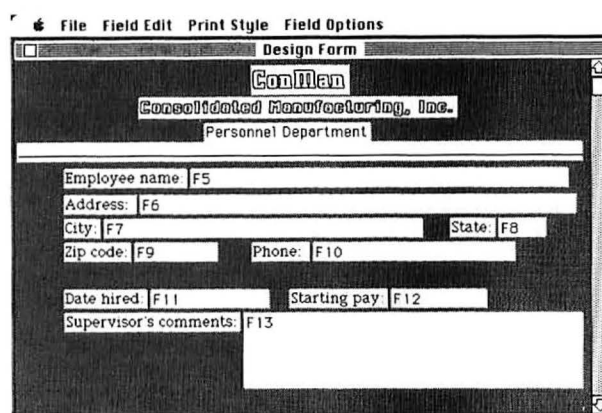


Figure 7
A *DB Master* data entry screen. You can choose up to nine Macintosh fonts, in any size and style, such as plain, bold, underline, or outline.

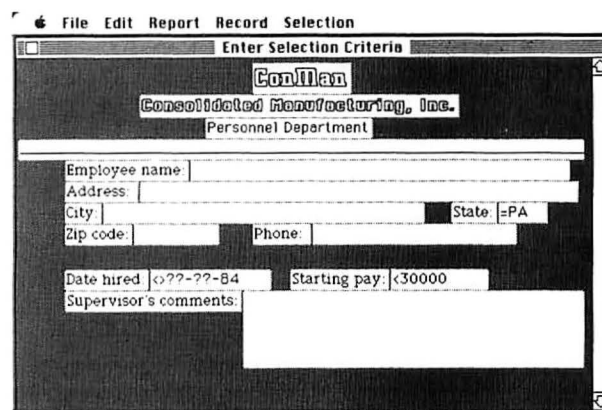


Figure 8
Searching with *DB Master*. The search specified here finds all employees who live in Pennsylvania, who were not hired in 1984, and who started at less than \$30,000.

Retrieving stored data is equally easy. To find specific records, you fill out a search screen that resembles the entry form, typing what you're looking for in the appropriate fields, then choosing Find First Record (see Figure 8). To browse through your data base, choose Select All Records, and the first record will be displayed.

DB Master provides a wealth of search characters, and the program lets you specify up to 20 sets of search criteria. You can fill out up to 20 search screens, and then search for records that meet the first set of criteria, or the second set, the third set, and so on. Using the employee data base example, you can instruct *DB Master* to display the records for all employ-

Figure 9

Designing a Main Street Filer data base. Five fields have already been designed; the sixth, Date hired, is being specified. Clicking the question mark buttons displays a short help screen; help is available for most areas of Main Street Filer.

ees who were hired before July 1, 1980, who were transferred into your department before July 1, 1980, or who quit before August 17, 1984. None of the other data base managers reviewed offers this kind of flexibility.

The search itself is over almost before you know it. If you're searching on the key field (usually the first field in each record), the program can find any record in less than one second, regardless of a file's size. Once a record is found, you can delete it or edit it using the standard Mac editing commands, such as Cut, Paste, and Undo.

One of *DB Master*'s best features is its ability to support huge data bases spanning many disks. With a hard disk system, the program can work with a data base up to 20 megabytes long. With floppy disks, the program can handle files on up to 44 disks—you'll get swapper's cramp long before you'll reach *DB Master*'s capacity.

Printing Reports

When you design a new report, *DB Master* presents a dialog box that lets you specify which fields and records you want to print, the sorting order, page layout (page width and whether or not you want page numbers and the date printed on each page), title lines (you're allowed up to four), and print style.

When you specify the fields you want printed, a screen identical to the data entry form appears. You select a field for printing by clicking on its name or anywhere in its data area. A number appears in the field's data area that tells you in which column the field will be printed. You select the records to print the same way that you search for specific records. And you can save complex report designs on disk for future use.

DB Master takes advantage of the Imagewriter's print styles, such as condensed, wide, and proportional spacing, but unfortunately the program doesn't print the Macintosh fonts. This restriction is disappointing, considering the program's excellent use of fonts on screen for data entry.

DB Master Report Card

DB Master is fast and easy to use. It takes advantage of the Mac's menus and user interface; you type only the actual data being entered or searched. All commonly used commands have ⌘-key shortcuts, and the manual is thorough. These features, plus the program's ability to work with mammoth data bases, put *DB Master* in the heavyweight class for data base managers.

Main Street Filer

Main Street Software's *Main Street Filer* was one of the first data base managers available for the Mac. When it was the only kid on the block, it did the job and was worth using, but with products such as *1stBASE* and *DB Master* available, *Main Street Filer*'s shortcomings—its awkward design and poor documentation—show up like potholes.

File Design

Upon starting *Main Street Filer*, you are greeted with a dialog box that says, "Welcome to the Main Street Filer. To run any of the programs, make a selection from the menu bar above." Your first reaction is likely to be, "What programs?" Then you realize that the program is waiting for you to choose a command. What you may not realize is that *Main Street Filer* calls each of its functional areas—such as record adding, searching, and report printing—a "program." If you miss this subtle point, you could be in for trouble as you try to find your way around Main Street.

You design a new file by choosing the Files command from the Add menu or the New command from the File menu. Having two different commands with identical functions is bound to confuse beginners.

Once you have chosen either command, you're ready to begin designing your file (Figure 9). You can choose a preset, seven-field name and address file format, or you can create a new design. *Main Street Filer* accepts field names of up to 20 characters. It is not as restricting as *1stBASE*'s 12-character limit, but not as flexible as the other programs reviewed here. You can specify that a field not appear for data entry, which is handy if you have a field whose contents you won't know until a later date. You can also specify that a field's data be carried forward to subsequent records, which is convenient when you enter records having identical cities and states, for instance.

The maximum field length is 40 characters, which makes *Main Street Filer* more suited to simple address files than lengthy, text-oriented data bases. You can choose from four field types: alphanumeric, integer (numbers without decimal values), real (numbers with decimals), and date. After specifying field names and characteristics, you specify how your file will be sorted, with up to four levels of sorting available.

Data Entry and Retrieval

Figure 10 shows the *Main Street Filer* data entry screen. Unlike *pfs:File* and *DB Master*, the program's data entry format is fixed—you can't customize your own forms. Data entry is straightforward; pressing the Return key or clicking the pointer at the appropriate spots moves you from field to field. You store a record by clicking the Accept button or pressing Return twice after filling in the last field. To select text, drag across it or double-click on it. Although you can delete selected text by pressing the Backspace key, you can't cut or paste, because *Main Street Filer* lacks an Edit menu. As far as the program is concerned, the Mac's Clipboard doesn't exist.

You browse or search for specific records by clicking the Search button or choosing Records from the Change/Examine menu (another case of two different actions performing the same function). Once a record is displayed, you can browse forward or backward in a file by clicking the plus or minus buttons. You can also delete the displayed record, search for a different record, or add new records, all by clicking the appropriate buttons (see Figure 10).

The buttons all duplicate commands available in *Main Street Filer*'s menus. Until you get used to this quirk, you might get confused between clicking the Add button or choosing the Add command.

Printing Reports

Main Street Filer offers several report formats, which you choose from the Print menu. The columnar report format is the most flexible; you can specify the fields you want printed and their position, as well as subtotals or totals for numeric fields (see Figure 11). Other report formats include mailing list (which prints fields in a fixed name and address format), and mailing labels, envelopes, and Rolodex cards. The last three formats are essentially identical, with field positions preset in mailing label format. *Main Street Filer* lets you print on mailing label paper with two, three, or four labels across.

Before printing a report, you can specify selection criteria that determine which records are printed. You can specify a selection range, such as all records with last names between A and G. You can also specify that certain records be excluded, such as any with last names beginning with E. Finally, you can combine selection and exclusion to produce more complex criteria, such as all records with last names between A and G, excluding those beginning with E. The selection commands aren't as flexible as those offered by the other programs reviewed, but they're adequate for mailing lists and simple filing applications.

Main Street Filer offers one thing that the other programs lack, however: high-resolution print quality. You can print your reports in either standard or high quality. Mailing labels, Rolodex cards, and envelopes are printed in the Chicago font, while columnar reports appear in Geneva.

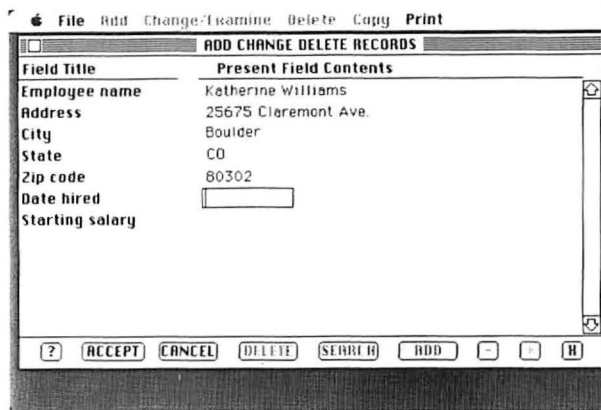


Figure 10
Main Street Filer data entry. The buttons at the bottom of the window let you obtain help, accept the current record, cancel data entry, and move into different areas of the program.

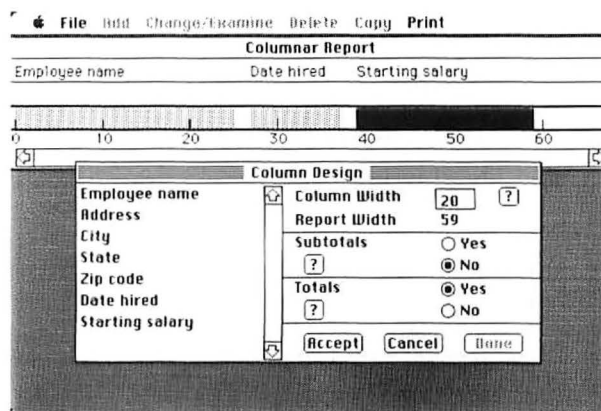


Figure 11
Main Street Filer report design. Here, the position and widths of the Employee name and Date hired columns have already been specified. A third column, Starting salary, is being added and given a width of 20 characters.

Main Street Filer Report Card

Main Street Filer is best suited to simple data management tasks such as mailing lists. Even in that application, however, the program's shortcomings show through. Its design is awkward, with many little quirks to get used to and work around. Main Street Software is working on a new data base management program, available in early 1985, that promises to correct many of *Main Street Filer*'s flaws.

OverVUE

ProVUE Development Corporation's *OverVUE* is a fascinating program. A cross between a data base manager and an electronic spreadsheet, *OverVUE* has strong math capabilities and can share data with other application programs via the Clipboard.

OverVUE stores data like an electronic spreadsheet, with each record in a row and each field in a column. You adjust field (column) widths by choosing Column Width from the SetUp menu, then dragging the pointer left and right in a special box while a counter reflects the current width (see Figure 12). You can insert a new field or delete an existing one at any time.

Data Bases at a Glance

The chart shows some of the features and capabilities provided by the programs reviewed here. Here's what the headings and the numbers mean:

- *Maximum field length.*

How many characters does the program allow in each field? The higher the number, the longer each piece of information can be.

- *Maximum fields per record.* How many fields does the program allow in each record? The more fields permitted, the more information you can store about each item in a data base.

- *Maximum record length.* How many characters are permitted in an entire record?

- *Records per file.* How many records can the program store under one file name? The words *disk* and *RAM* in this column mean that the number of records is limited only by the capacity of the disk or by the amount of memory available, respectively.

- *Computed fields per record.* Can you specify fields whose data is based on an equation that uses information from other columns? If so, how many such fields can you specify?

- *Form design rating.* The following is my rating system for a program's flexibility in letting you design data entry forms. A rating of 1, the lowest, means that the program's data

entry screen design is preset and can't be changed. A rating of 2 means that you can position fields anywhere but can't change their font style or size. A rating of 3, the highest, means that you can position fields anywhere and change their appearance.

- *Changeable design.* Does the program let you alter a data base design (add, remove, lengthen, or shorten fields) after you have started entering records?

- *Copy records to new file.* Can the program copy selected records (ones that meet certain criteria) to a new, smaller file?

- *Maximum sorting levels.* How many sorting levels does the program provide? A sorting level of 2 means that you can sort an address file by state, then by zip code within each state.

- *Computed fields.* Can the program print columns whose data is based on an equation that uses information from other columns?

- *Field totals.* Can the program add the information in one column and print a total at the bottom? In an expense account data base, for example, you would print the year's total expenses at the bottom of the report.

- *Field averages.* Can the program determine the average of all the data in a column and print it at the bottom? In an expense account data base, you would use this feature to print the average amount spent on a certain client.

- *Record count.* Can the program print the total number of selected records at the bottom of the report? In the expense account data base, you might use this feature to print the total number of expense vouchers turned in.

- *Report destinations.* Where can the program send your finished report? The letter *S* in this column means that you can view a report on the screen; the letter *P* means that you can send the report to the printer. The letter *D* means that you can send the report to a disk file that you can load into your word processor and spruce up. Since only one of the programs reviewed here can print the Macintosh fonts, the ability to send the report to a word processor is a valuable feature.

- *Headers and footers.* Can you print a title at the top and the bottom of each report page? This feature is especially important for reports longer than one page.

- *Print quality.* What does your hard copy look like? The letter *D* means draft, *S* means standard, and *H* means high quality.

- *Save report designs.* After you have designed a complex report, can you save the design and use it in the future, or do you have to redesign the whole thing to print a second copy?

	1stBASE	pfs:File pfs:Report	DB Master	Main St. Filer	OverVUE
Data Entry, File Management					
Maximum field length	50	see text	3000	40	62
Maximum fields per record	100	3100*	100	36	64
Maximum record length	5000	50,048*	3001	1440	3968
Maximum records per file	disk	2900***	see text	65,000	RAM
Computed fields per record	25	none	20	none	64
Form design rating (1-3)	1	2	3	1	1
Changeable design	yes	yes	yes	yes	yes
Copy records to new file	yes	yes	yes	yes	yes
Report Generation					
Maximum sorting levels	10	1, 2	10	2	unlimited†
Computed fields	yes	no, yes	yes	no	no
Field totals	yes	no, yes	yes	yes	yes
Field averages	yes	no, yes	no	no	yes
Record count	yes	no, yes	yes	no	yes
Report destinations	S,P,D	S,P,D**	S,P,D	S,P	P
Headers	yes	no, yes	yes	yes	yes
Footers	no	no, no	no	no	yes
Print quality	D	D‡	see text	D,S,H	D
Save report designs	yes	yes, yes	yes	yes	yes

*These values are technically correct, because you can have 100 fields per page and up to 31 pages per form (record). A file design like this, however, would let you store few records.

†OverVUE sorts on one field at a time. You can, however, sort on different fields repeatedly; the program maintains the previous sort order.

**pfs:File cannot send a report to a disk file; pfs:Report can.

‡pfs:File and pfs:Report let you send control characters to the Imagewriter; you could, therefore, specify different type styles (pica, elite, or proportional), but not the Macintosh's fonts.

***pfs:File can store up to 32,000 records on a hard disk.

Figure 12
Changing a field's width with OverVUE. You simply drag the pointer left and right, while the number at the left reflects the new width in characters. The width of the City column is being changed.

Date	City	St	Area	Phone	Time	Rate	Charge	Carrier
01/14/84	Los Angeles	CA	213	383-2225	13	DM	1.12	GTE
01/15/84	Pico Rivera	CA	714	993-7836	91	DM	4.76	GTE
01/17/84	Pasadena	CA	213	793-1140	1	DE	.21	GTE
01/17/84	Pasadena	CA	213	793-1140	10	DE	1.53	GTE
01/17/84	Anaheim	CA	714	991-4328	42	DE	2.70	GTE
01/18/84	Glendale	CA	213	247-9247	3	DE	.72	GTE
01/18/84	Glendale	CA	213	247-9247	7	DM	1.56	GTE
01/18/84	Los Angeles	CA	213	851-2529	7	DM	1.56	GTE
01/19/84	Glendale	CA	213	247-9247	6	DM	1.35	GTE
01/19/84	Los Angeles	CA	213	487-5000	2	DM	.51	GTE
01/19/84	Los Angeles	CA	213	487-5000	1	DM	.30	GTE
01/21/84	Los Angeles	CA	213	850-6525	8	DM	.70	GTE
01/23/84	Riverside	CA	714	783-0746	1	DE	.23	GTE
01/26/84	Orange	CA	714	634-2553	3	DE	.24	GTE
01/29/84	Anaheim	CA	714	533-6619	27	DM	1.00	GTE
01/29/84	Anaheim	CA	714	533-6619	63	DM	2.30	GTE
02/02/84	Los Angeles	CA	213	383-2225	2	DM	.51	GTE

Of the products reviewed, *OverVUE* provides the largest number of field attributes. You can set a field's attribute so that it accepts any characters, only letters, only letters and numbers, only phone numbers (parentheses and hyphens permitted), only monetary characters (numbers and dollar signs permitted), date, time, and yes/no (only a Y or an N permitted). Once a field's attribute is set, *OverVUE* accepts only characters for the given attribute, ignoring all other characters. This feature helps ensure accurate data entry.

If the attributes just mentioned aren't enough, *OverVUE* lets you specify four others. The Word Caps attribute automatically capitalizes the beginning of every word you type, while All Caps capitalizes everything you type, which is handy for fields that contain state abbreviations. The No Duplicates and No Unique attributes prevent you from typing a duplicate field or typing data that doesn't already appear in a given column. If, for example, you specify No Duplicates but you type data that already appears elsewhere in the same column, *OverVUE* displays an error message telling you that what you typed is a duplicate, and gives you the option of adding it anyway.

Searching and Sorting

Retrieving your data with *OverVUE* is easy. The screen displays up to 17 records at once; you can view the rest by scrolling. To select the records for all clients in Ohio, for example, you click on any State field, then choose Select from the Find menu. A text box then appears, asking for the text you're looking for. You type OH, press Return, the screen clears, and only the records with OH in the State field appear. You can expand the search, adding the records of all the clients in Indiana, by choosing the Select More command. Or you can narrow the search, selecting the records of only the clients in Cleveland, by choosing the Select command again. You can view all records not selected by choosing Select Reverse, or you can view everything by choosing Select All.

Math Features Add Up

OverVUE has a spreadsheet-like array of math and column-filling functions. Besides being able to display the total, average, minimum, and maximum values in a given column, you can specify a running total and a running difference. A running total, instead of adding up all the fields and printing a total at the bottom, adds up all the fields and replaces the data in each field with the current total. This feature can be useful for computing checking account balances. A running difference performs just the opposite function, subtracting and updating each field as it goes. In fact, you can use a running difference to restore the original data to fields altered by a running total.

OverVUE is also like a spreadsheet in the way that it lets you assign equations to fields. You could, for example, create a Net Pay field that gets its contents when deductions are subtracted from the value in a Gross Pay field. Unlike many spreadsheets, however, *OverVUE* also provides features that let you take apart a string of characters. In a data base of telephone numbers, you could create a field called Area Code that obtained its contents by "slicing" the first three characters from the Telephone Number field. You can even trim entire words, which would enable you to create a field called First Name that gets its contents by slicing the first word from every Full Name field.

Printing Reports

OverVUE has flexible report-generation features. You can use the program's preset report design or create almost any design you can dream up. You design a report by choosing Edit Report Template from the Print menu. The screen clears, and a list of the fields in your data base appears. You position the fields where you want them by dragging them on the screen. You control the amount of space printed after each record by resizing the window where the field names appear (see Figure 13). This procedure makes it easy to visualize how your final report will look.

After you have designed your report, you can save the design for future use and print the report. *OverVUE* lets you save up to eight designs for each data base.

OverVUE Report Card

With its row-and-column orientation, *OverVUE* is well suited to data bases having short field lengths, such as checkbook ledgers and address files—in fact, any data base that stores information in row-and-column format. It's not suited to long, text-oriented data bases, and because it scrolls horizontally, the program is not suited to data bases having a large number of fields. Because the program keeps the data base in memory at all times, it's best for data bases of about 500 to 700 records on a 128K Mac. On a 512K Mac, you can maintain several thousand records in memory.

OverVUE's best feature is its ability to place entire data bases on the Clipboard (memory permitting). When you choose the Clip and Quit command from the File menu, *OverVUE* puts all currently selected

records on the Clipboard, then quits to the Finder. You can then start *MacWrite* or, better still, *Multiplan*, and paste the entire data base into a new document, with all fields lined up in columns (and, in *Multiplan*'s case, each field in its own cell).

OverVUE's ability to transfer data between programs makes it an excellent complement to another data base manager, and its ability to share data with *Multiplan* files makes it a must for serious financial work.

The Others

A few Mac data base managers were unavailable for review but should be released soon. *Microsoft File* was still in development at the time of this writing, but a preview shows that the program can store graphic images as well as text and has easy file- and report-designing features.

Organizational Software Corporation's *Omnis 2* is being redesigned to take advantage of the Mac's user interface. The program performs calculations on both data and numeric fields and includes global update and delete facilities, record retrieval on up to 50 selection criteria, and a report generator. Buyers of the original version can purchase an upgrade for \$25.

Another data base management program that will soon be available is Odesta's *Helix*, which can store text and graphics and lets you restructure forms by arranging icons that represent information types. *Helix* places no restrictions on fields per record, characters per field, or keys per sort, and includes a report generator.

In addition to those mentioned here, at least half a dozen data base managers are under development at this time. Check your local computer store to see what's available.

Wish List

I would like to see printing features improved in the programs reviewed here. All but *Main Street Filer* print in draft quality only, which is a waste of the Macintosh's fonts. I'd also like to see improved report-designing features. Only *OverVUE* lets you drag fields into the positions you want. The other programs limit you to columnar reports or mailing-label-style reports. I'd also like to see more programs produce two- and three-across mailing labels—only *Main Street Filer* and *IstBASE* print them that way now.

There you have it—a sampling of Macintosh data base managers. Armed with the information in this review, you should be able to judge your data management needs. Narrow your search to one or two programs, then visit a dealer and try them out. Create a sample data base that resembles the kind you're most likely to use. Only then can you be sure that a program will do the job you need. □

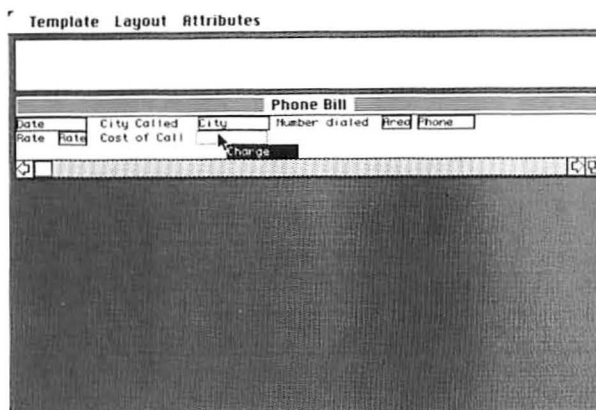


Figure 13

Designing an OverVUE report. The field names are enclosed in boxes; you position them by dragging. The other text appears next to each field's contents. You specify the amount of blank space to print after each record by resizing the window. You can save up to eight report designs for each data base.

▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ Jim Heid is a freelance writer and the author of a book on Apple's Macintosh BASIC, forthcoming from Ashton-Tate.

IstBASE
DeskTop Software Corporation
228 Alexander St.
Princeton, NJ 08540
609/924-7111
List price: \$195

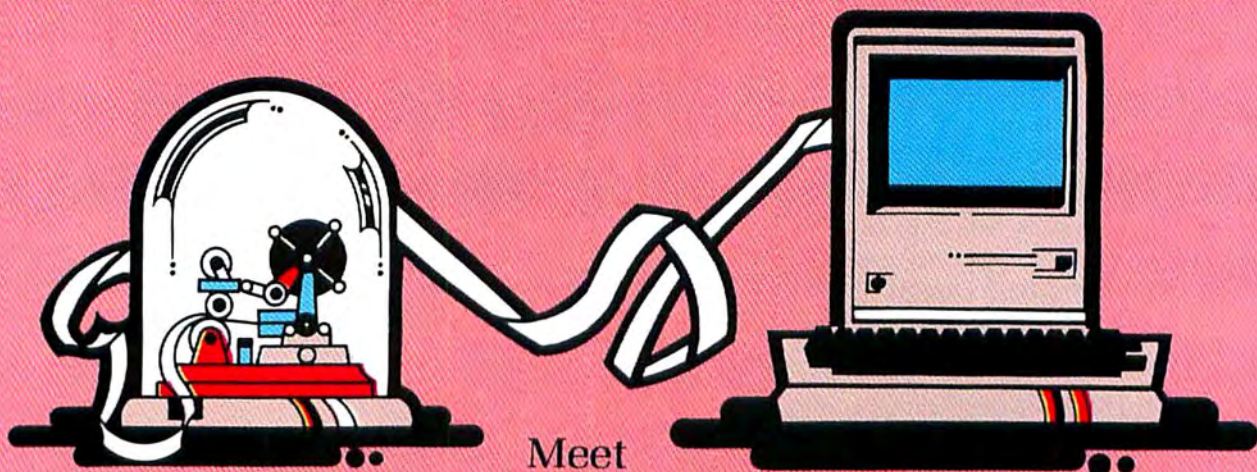
pfs:File, pfs:Report
Software Publishing Corporation
1901 Landings Dr.
Mountain View, CA 94043
415/962-8910
List price: \$195

DB Master
Stoneware Incorporated
50 Belvedere St.
San Rafael, CA 94901
415/454-6500
List price: \$195

Main Street Filer
Main Street Software
1 Harbor Dr.
Sausalito, CA 94965
800/824-8757, 415/332-1274 in
California
List price: \$199

OverVUE
ProVUE Development Corporation
222 22nd St.
Huntington Beach, CA 92648
714/969-2431
List price: \$295

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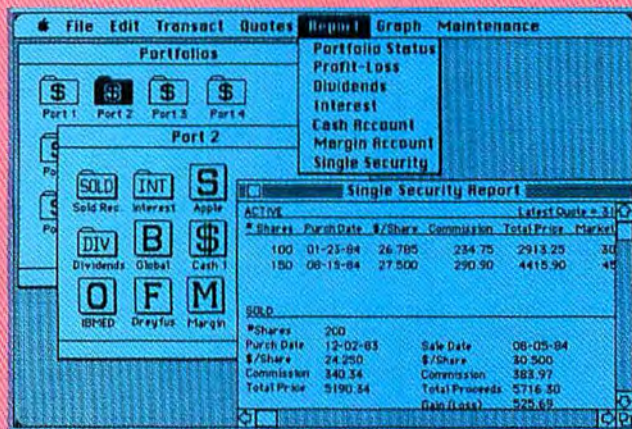
SOPHISTICATED

The Investor is a sophisticated system of portfolio management, created exclusively by P³ INC. Capitalizing upon the incredible powers of your Macintosh, The Investor gives you control over your investment portfolio.

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The Investor
\$150.⁰⁰

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The Engineer, The Professor and others are coming soon to your local software dealer. Watch for a program perfectly suited to your professional needs. Ask your dealer for The Investor, or
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MasterCard & VISA welcome.

MUSICWORKS™ BRINGS OUT THE MUSIC IN YOU.

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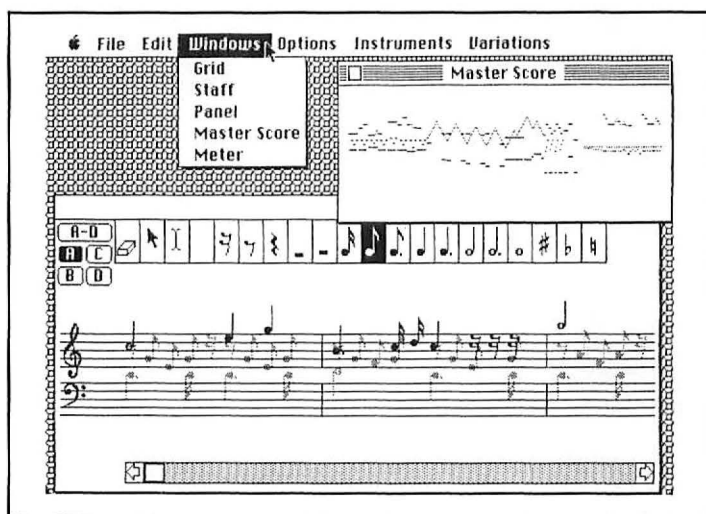
With MusicWorks you can compose music directly on your Macintosh™ and hear the results instantly.

Even if you can't read a note, you can easily use MusicWorks to produce professional musical scores. You compose on a seven-and-a-half octave grid that corresponds to the keys of a piano. Use your mouse to place "notes" on the grid. As you place them, you hear them. When you've got your song the way you want it, MusicWorks can transform your grid into a musical staff, insert the proper musical notation, and print it out in a professional format which any musician can follow.

If you already know musical notation, you can compose directly on a staff. Use the mouse to place your notes, to select the meter and key signatures, and to listen to your music instantly.

Either way, grid or staff, if you make a mistake or want to change something, simply erase and edit.

You can play back your whole



composition or any part of it whenever you want.

ORCHESTRATE 4 PARTS SIMULTANEOUSLY.

Choose any 4 instruments from out of a selection of 10. You've got piano, chimes, flute, trumpet, organ, even a synthesizer for that contemporary electronic sound.

You can hear all four instruments at once, or turn them off selectively so you can alter individual parts.

A LITTLE BACH IN EVERY BOX.

MusicWorks comes with templates which guide you through the instructional process

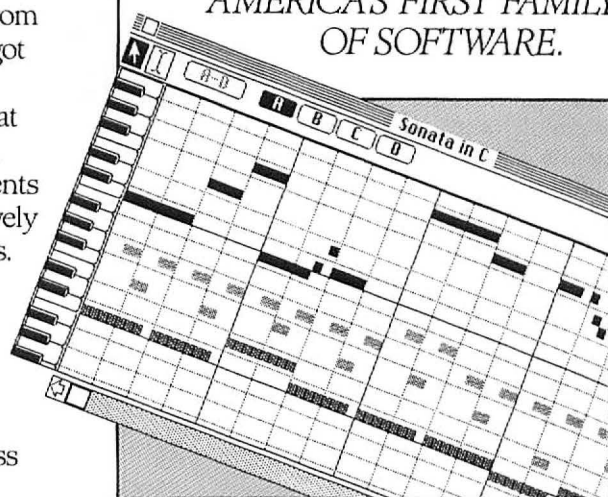
by playing classical and popular selections.

MusicWorks is part of the Hayden HeadStart Program which allows schools to accumulate points toward free computers, peripherals, and software. Buy MusicWorks, and your school will receive 50 HeadStart Points.

MusicWorks. Only \$79.95. Contact your local computer software dealer or Hayden Software, 600 Suffolk Street, Lowell, MA 01854, phone toll-free 800-343-1218.

Macintosh is a trademark of Apple Computer Corporation. MusicWorks is a trademark of MacroMind, as licensed exclusively by Hayden Software Company, Inc.

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HAYDEN

WORD CHALLENGE.TM THE BEST WORD GAME YET. IT'S MIND BOGGLING FUN.

IF YOU LIKE WORD GAMES, HERE'S THE ONE FOR YOU.

Word Challenge. A mind boggling computer game in which you compete head to head against LEXTM and his 90,000 word lexicon. It's a race against the clock. You and LEX each form words as quickly as you can by connecting randomly generated letters inside a playing grid.

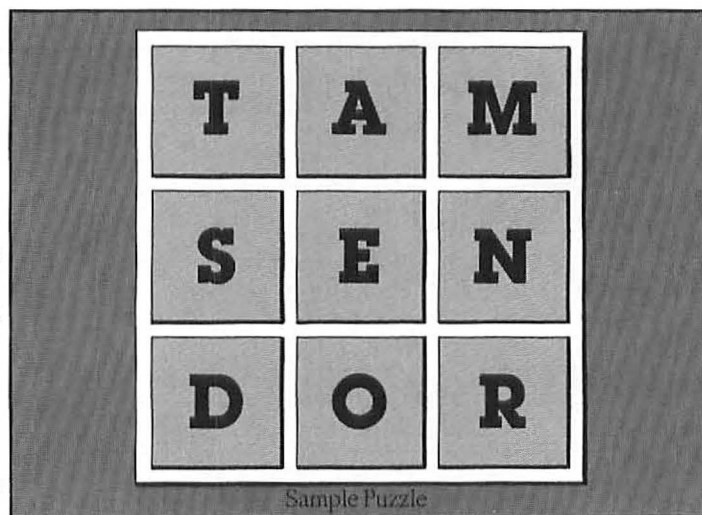
You win points for every word you found that LEX didn't. Word Challenge keeps the score.

HOW MANY WORDS CAN YOU FIND IN THIS WORD CHALLENGE GRID?

Words are legal if their letters touch in sequence on any side or corner. "TEAM" is legal, while "TEAMS" is not, since the "S" does not touch the "M." LEX, playing at a "friendly" level, found 23 words of three letters or more. At his most competitive, LEX found 110 words (see list to the right). Can you do better?

Play Word Challenge alone or with a group. See if your family or friends together are wordy enough to bring LEX to his knees. You'll have a lot of fun and learn a new word or two in the process.

Word Challenge operates on



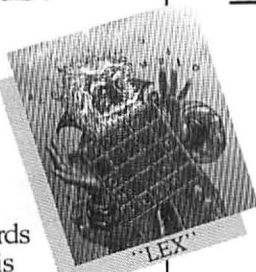
Sample Puzzle

Can you beat LEX?

Puzzle Answers

Here's what LEX found. Can you do better?

tern	saner	sedou	seuue
tenor	sane	sedo	seuam
ten	sane	pod	seuam
teas	rose	net	seuam
team	rose	net	seuam
tea	ro	nest	seuam
tan	rod	neat	seuam
lames	rode	names	seuam
lamer	rod	named	seuam
lamed	rest	name	seuam
lame	red	met	seuam
lam	red	meson	seuam
stem	red	mesa	seuam
steam	reason	men	seuam
stamen	ream	meals	seuam
sore	orate	meat	seuam
son	ores	mean	seuam
sod	ore	mate	seuam
sed	ores	mate	seuam
senor	sedo	mate	seuam
seal	edo	mal	seuam
seam	sedou	master	seuam
sea	sedo	master	seuam
sated	son	masos	seuam
sate	son	masos	seuam
sas	son	masos	seuam



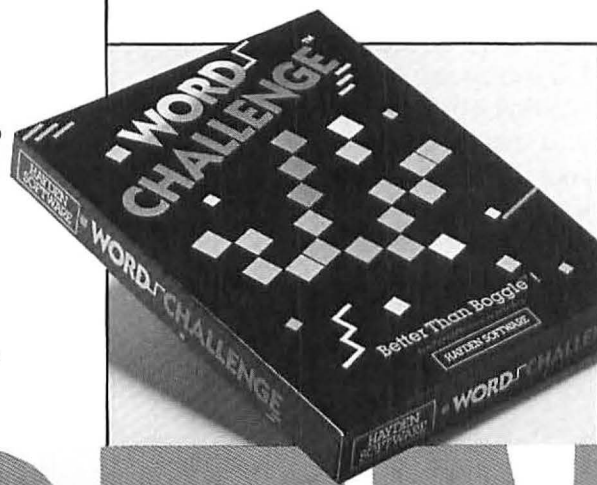
AppleTM II+, IIe, IIfx, MacintoshTM, Commodore 64TM, IBM PCTM, PCjrTM, and popular compatibles.

Word Challenge is part of Hayden's HeadStart Program which allows schools to accumulate points toward free computers, peripherals, and software. Buy Word Challenge, and your school will receive 20 HeadStart Points.

Word Challenge. Only \$39.95. Contact your local computer software dealer or Hayden Software, 600 Suffolk Street, Lowell, MA 01854, phone toll-free 800-343-1218.

Word Challenge and LEX are registered trademarks of Hayden Software Company, Inc. Word Challenge is based on Proximity Linguistic Technology. Apple and Macintosh are registered trademarks of Apple Computer Corporation. IBM PC and PCjr are registered trademarks of International Business Machines, Inc. Commodore 64 is a registered trademark of Commodore Business Machines.

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SENSATIONAL RELATIONAL!

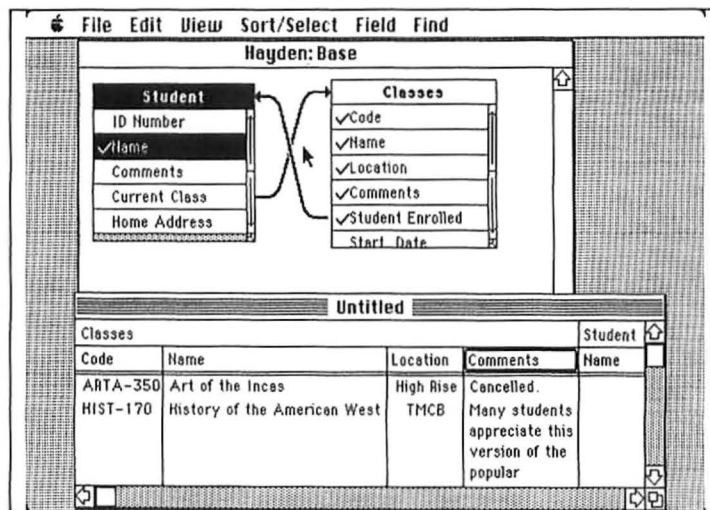
Hayden:Base is a fully relational database management program designed for the Macintosh.™

It organizes your data, interrelates it and then lets you look at it from multiple points of view.

There's no end to the way Hayden:Base can manipulate and interpret your data. Base fields can contain single or multiple entries. Fields are of variable length and can contain alpha or numeric data, dates, times, even MacPaint™-created illustrations!

*AN EASY WAY TO
KEEP TRACK OF WHO,
WHAT, WHERE, WHEN
AND WHY.*

Hayden:Base is so simple and elegant to use that you can perform the majority



of your analyses without ever touching the keyboard. You manipulate your data using your pointer and pull down menus. Overlapping windows let you look at several files simultaneously.

Hayden:Base lets you easily prepare reports or custom design forms.

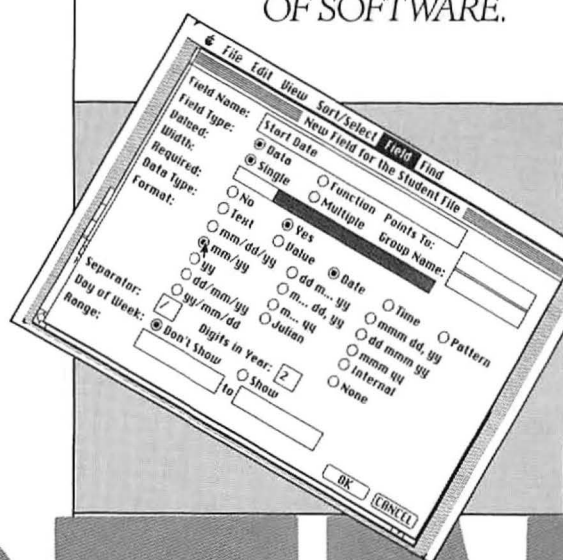
If you change information in one file, Hayden:Base automatically updates information in up to 15 other related files.

*BASE YOUR DATA
ON HAYDEN:BASE.*

For information about this innovative productivity tool, contact your local computer software dealer or Hayden Software, 600 Suffolk Street, Lowell, MA 01854, phone toll-free 800-343-1218.

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Hayden:Base is a registered trademark of Hayden Software, Inc.

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HAYDEN:SPELLER.™ MAKES MACINTOSH™ LETTER PERFECT.

TAKE THE FICTION OUT OF YOUR DICTION.

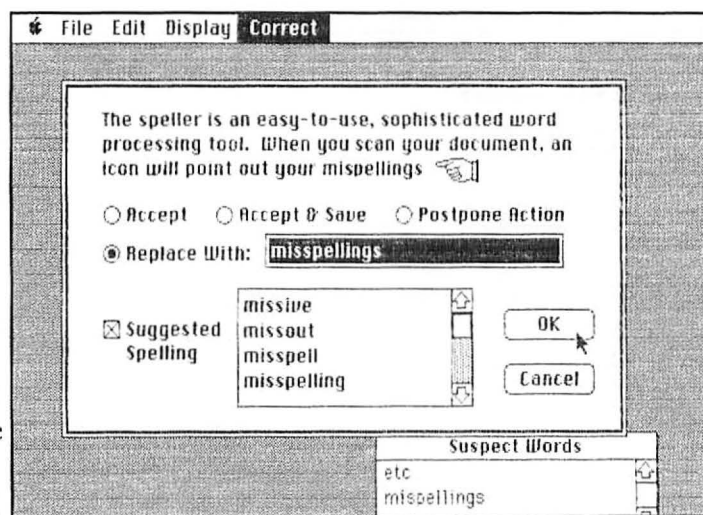
The Hayden:Speller spelling checker software program catches and corrects spelling errors and typos.

It's easy. Using pulldown menus and dialog boxes, you check your documents against a dictionary covering 97% of the most frequently used words in the English language. It's quick. Hayden:Speller can check a 5 page document in less than 10 seconds. It's complete. You can easily create your own "personal dictionary" with up to 50,000 words per disk. You can then let Hayden:Speller check these words, too.

EASY, FAST, AND SIMPLE.

Hayden:Speller either lists questionable words or points them out in context. You choose what to do next.

If the word's correct as is, let it go unchanged. If it's an



obvious misspelling, change it yourself. You can do it directly within the spelling checker program. There's no need to switch back to your word processing disk. If you don't know the correct spelling, have Hayden:Speller find it for you.

A click of your mouse makes the necessary correction.

WORKS WITH MACWRITE™ AND MICROSOFT WORD™

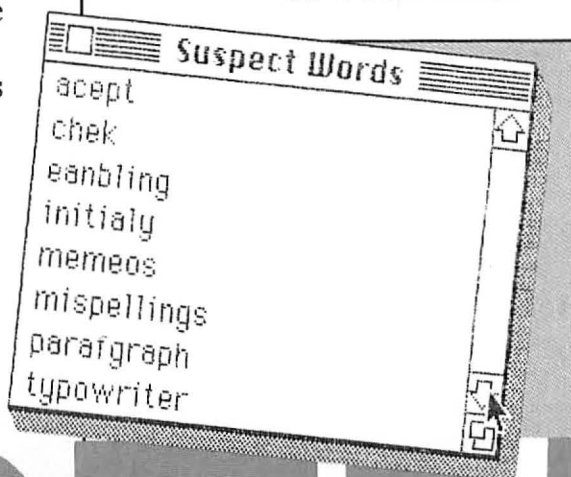
Hayden:Speller is fully compatible with MacWrite and Microsoft Word. It takes

advantage of their special Macintosh features, such as windows, menus, and of course, mice.

For more information on Hayden:Speller, contact your local computer software dealer or Hayden Software, 600 Suffolk Street, Lowell, MA 01854, phone toll-free 800-343-1218.

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Hayden:Speller is a registered trademark of Hayden Software, Inc.
Microsoft Word is a registered trademark of Microsoft Corporation.

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Macware News

*The latest developments in Macintosh software,
hardware, and accessories*

Edited by Erfert Nielson

Macware News announces new Macintosh products. Those listed here are available now or will be in the near future. We will keep you informed of developments as the number of products for the Mac increases.

Software

■ Casady Company

P.O. Box 223779
Carmel, CA 93922
408/646-4660

Fluent Fonts

A disk containing 18 fonts that you can install with the Font Mover utility and type from the keyboard. Included on the disk are several display fonts, text fonts, and two foreign-language fonts: Cyrillic and Hebrew (a right-to-left word processor is not provided for the Hebrew characters). Many of the fonts are available in two sizes. A set of electronic symbols, available in two sizes, is also provided to aid circuit design in *MacPaint* and *MacDraw*. List price: \$37.50 plus \$2 shipping.

■ Computer Software Design Inc.

1911 Wright Circle
Anaheim, CA 92806
714/634-9012

MacLion

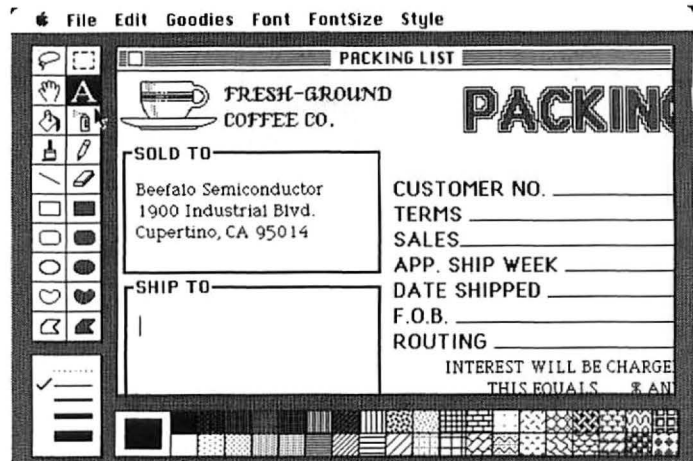
A relational data base manager and applications development system. *MacLion* has a menu-driven query language, custom report and screen generators, and a data dictionary that lets you define and choose fields according to need. *MacLion* provides a FORTH-like programming language and a text editor, allowing you to create custom applications. List price: \$379.

■ Computing Capabilities Corporation

465-A Fairchild Dr. #122
Mountain View, CA 94043
415/968-7511

Klondike

A solitaire game that features one- or three-card draw, musical effects, and scoring based either on the time it takes you to win or on the progress you make before you lose. You use the mouse to select and move cards on the screen. List price: \$39.95 plus \$2 shipping.



MacForms, Datafood

■ Creighton Development, Inc.

4931 Birch St.
Newport Beach, CA 92660
714/476-1973

MacSpell +

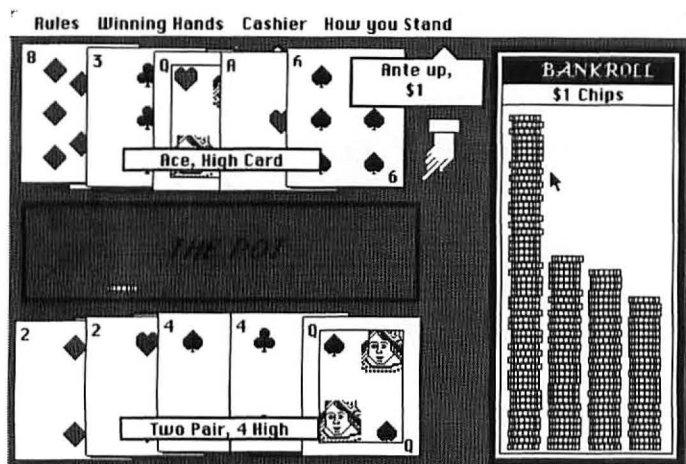
An interactive spelling checker that has a dictionary of over 30,000 words and allows you to add over 2500 more. The program also provides a thesaurus and a word hyphenation feature. *MacSpell +* is installed as a desk accessory in *MacWrite*, so you need not quit *MacWrite* to check a document for spelling mistakes. Misspellings are automatically replaced with your choice from a list of possible corrections. Similarly, you choose from a list of possibilities to select a synonym from the thesaurus or a word break from the word hyphenation option. List price: \$99.

■ Datafood

400 N. Dupont Hwy. #G-13
Dover, DE 19901
302/736-9098

MacForms

More than 100 business forms that can be used as-is or customized using *MacPaint*. The forms can be filled out using *MacPaint*'s text option, printed out, and saved. The four-disk package includes forms in the following categories: Accounting and Financial Management, Purchasing and Materials Management, Personnel and Time Management, and Sales and Project Management. List price: \$79.95.



Mac-Poker, DataPak Software

■ DataPak Software, Inc.

14755 Ventura Blvd. #1-774
Sherman Oaks, CA 91403
818/905-6419

Mac-Poker

A game of five-card draw against the Macintosh. Cards and chips are dragged across the playing screen. You and the Mac are each dealt five cards, face down, after you ante up. You can look at your cards at any time by clicking a box labeled Peek. You also click boxes to pass, call, call and raise, draw, or fold. List price: \$39.95.

■ Design Loft

Box 1650
Palo Alto, CA 94302
415/493-9500

Macinshots Photo Album

Digitized photographic images that you can insert into *MacPaint* or *MacWrite* documents. The pictures include people, animals, vehicles, celebrities, athletes, party items, and miscellaneous images. List price: \$39.95 plus \$5 shipping.

■ Eqtron Corporation

330 Bay St. #1115
Toronto, Ontario
M5H 2S8 Canada
416/361-5002

MacBase

A relational data base program that enables you to place fields anywhere on the screen. Calculated fields appear on the screen, so a report generation program is unnecessary. The printed copy will look just like what's displayed on the screen. The number of fields is limited only by available memory, and the number of records is limited by file space. *MacBase* can be used with one or two disk drives. List price: \$195.

■ Expertelligence

559 San Ysidro Rd.
Santa Barbara, CA 93108
805/969-7874

ExpertLisp

A compiled version of Lisp that gives programmers access to graphics routines, pull-down menus, multiple windows, and operating system routines. The compiler optimizes code by compiling directly to MC68000 machine code. ExpertLisp provides control structures such as DOLIST, DOTIMES, CASE,

CATCH, and THROW, all of which are compiled in-line. ExpertLisp also features a single-inheritance class system similar to that of Smalltalk. A break package allows you to interrupt execution, examine and change variables and functions, and then resume execution. ExpertLisp's Load-On-Call automatically fetches code from disk as it is called from a running program. Load-On-Return lets you run programs larger than the Mac's memory because only the code for the currently executing function need be in RAM at any given time. List price unavailable.

■ EZ Ware Corporation

17 Bryn Mawr Ave.
Bala Cynwyd, PA 19004
215/667-4064

Tax-Prep

A personal income tax preparation system used with *Microsoft Multiplan*. *Tax-Prep* incorporates all new tax laws and IRS regulations for the 1984 tax year. The program includes 22 IRS schedules and forms, which are presented on the screen as working templates; any information you enter is automatically applied to all other appropriate forms and schedules. *Tax-Prep* can also be tied to

other *Multiplan* templates, such as checkbook, ledger, and expense record, to simplify year-end computations. List price: \$129.95.

■ Hippopotamus Software

1250 Oakmead Pkwy. #210
Sunnyvale, CA 94086
408/730-2601

Hippo-C

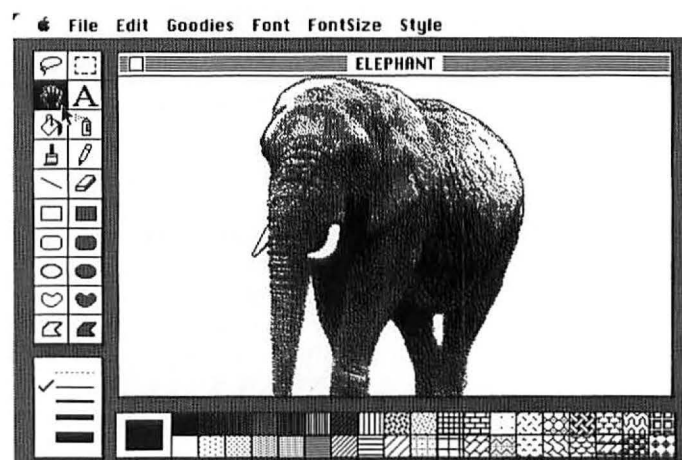
A software development system that allows you to edit, compile, link, and execute C programs on a 128K Macintosh. Hippo-C is available in two levels. Level 1 is a full Kernighan and Ritchie C compiler that includes an on-line tutorial, an editor, a linker, a library, and a debugger. Level 2 is a professional optimizing C compiler that includes an editor and an assembler/linker. Both levels support Macintosh Toolbox routines. List price: Level 1 \$149.95, Level 2 \$399.95.

■ Magnum Software

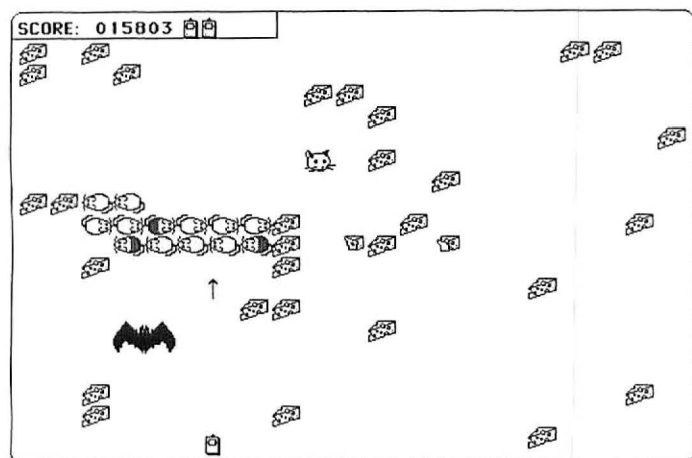
21115 Devonshire St. #337
Chatsworth, CA 91311
818/700-0510

Slide Show Magician

A program that lets you use your Macintosh to present "slide shows" that include spe-



Macinshots Photo Album, Design Loft



Mouse Stampede, Mark of the Unicorn

cial effects such as fades and wipes. *Slide Show Magician* can be used in business presentations, sales demonstrations, and educational applications. You click from one frame to the next or have the show run automatically; *Slide Show Magician* can run continuously as an unattended display. Control buttons on the screen allow you to start the presentation, move to the next frame, back up, jump to a specified frame, pause, or quit the program. You can superimpose text over pictures for varying lengths of time and use a special pointer to draw on any frame during a presentation. List price: \$59.95.

■ **Malon Products**
2306 Cotner Ave.
Los Angeles, CA 90064
213/829-4436

UltraFonts
More than 20 fonts that range from traditional serif typefaces to modern decorative fonts. The fonts can be installed in *MacWrite* or *MacPaint* with the Font Mover utility and typed from the Mac's keyboard. Sizes vary from 9 to 36 points. You can also select condensed

forms that look the same on the screen as a standard font but take up less space on disk. The disk also includes international symbols and decorative borders. List price: \$19.95.

■ **Mark of the Unicorn, Inc.**
222 Third St.
Cambridge, MA 02142
617/576-2760

Mouse Stampede
An arcade-style game that pits the player against a pack of rampaging mice, as well as a host of other adversaries, including zigzagging knives, swooping bats, and falling shopping carts. List price: \$39.95.

■ **Mesa Graphics**
P.O. Box 506
Los Alamos, NM 87544
505/672-1998

Tekalike
An application that lets you use the Macintosh as a Tektronix-compatible graphics terminal, giving you access to graphics software on IBM, CDC, DEC, CRAY, PRIME, and other mainframe computers that support the Tektronix 4010, 4012, 4014, or 4016 graphics terminal. Compatible graphics software

includes Issco Graphics (*Tellagraf*, *Disspla*, *Cuechart*, *Tellaplan*), Precision Visuals (*DI-3000*, *Grafmaker*), SAS/Graph, SPSS/Graph, and Tektronix (*Plot-10*, *Easygraph*). *Tekalike* supports recording and playback with zooming of original high-resolution data from the mainframe, high-resolution plotting, direct printing, and use of the mouse. Graphics from the host computer can be displayed, edited with *MacPaint*, and pasted into other applications, such as *MacWrite*. List price: \$250.

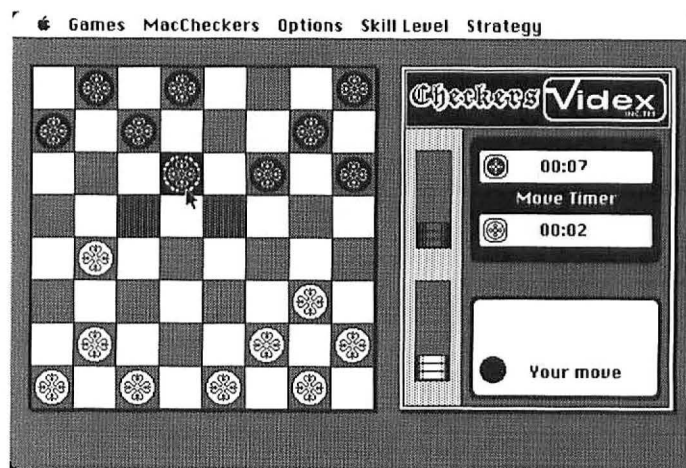
■ **Physical Sciences, Inc.**
Research Park
P.O. Box 3100
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617/475-9030

Mathpak
A series of mathematical programs that run with Microsoft BASIC. *Mathpak* includes Root Finder, which solves up to 20 different equations simul-

taneously; a Gaussian Elimination program for solving linear systems; a Polynomial Fitting program for approximating and smoothing data; and a non-linear constrained Optimizer. The programs can be used in a variety of scientific and engineering applications. List price: \$75.

■ **Videx, Inc.**
1105 N.E. Circle Blvd.
Corvallis, OR 97330
503/758-0521

MacCheckers/Reversi
A disk containing two games: checkers and *Reversi*, a board game popularized by Gabriel's *Othello*, in which a player attempts to surround and capture an opponent's pieces. *MacCheckers* features a variety of playing levels and strategies. The Mac can serve as a playing board for a two-player game or act as the opponent. List price: \$49.

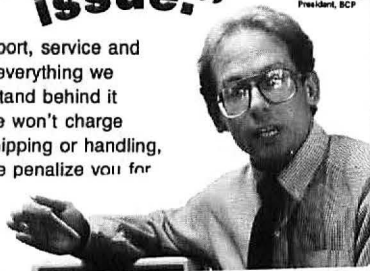


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Macware News

MacGammon/Cribbage

A disk containing two games: backgammon and cribbage. You play *MacGammon* against the Macintosh. You click a box to roll a pair of dice, then move your pieces using the mouse. The cards and pegs in *Cribbage* are also moved by means of the mouse. *Cribbage* features four skill levels. List price: \$49.

Warner Software, Inc.
666 Fifth Ave.
New York, NY 10103
212/484-3070

Desk Organizer

A program that offers seven basic functions: filing, organizing notes and correspondence, phone dialing, writing and printing, calculating formulas, transferring data between applications, and managing your time. You can store text from *MacWrite* or *MacPaint* in *Desk Organizer's* Rolodex-type file. The program is installed as a Macintosh desk accessory, so you can use it at any time without quitting the application you are running. List price: approximately \$250.

Hardware

Cardco, Inc.
300 S. Topeka
Wichita, KS 67202
316/267-3807

MLQ/3 Printer

A letter quality printer with a built-in interface that allows you to connect it to the Macintosh; no additional software or

hardware is necessary. The MLQ/3 is a daisywheel printer with an 11-inch carriage; it prints 13 characters per second. List price: \$499.

EPIX

7223 N. Hamilton Ave.
Chicago, IL 60645
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Silicon Video

A video digitizer that allows the Macintosh to digitize, process, and display a video signal from a TV camera or other video source. Video data is digitized and displayed at 8 bits per pixel. Silicon Video is available with either 256K or 1 megabyte of memory for storing image sequences. You can set the area and sampling frequency of the video raster. List price: 256K \$3495, 1M \$4495 (camera not included).

Oberon International
5525 MacArthur Blvd.
#630, LB 48
Irving, TX 75038
214/257-0097

Omni-Reader

An optical character reader consisting of a 10½-inch wide by 16-inch long tablet with a manually moved read head that slides along a guide rule, a power adapter, and a 15½-inch ruler that can be attached to scan wide documents. The Omni-Reader scans one line of text at a time, converts the characters to ASCII format, then displays the text on the screen. You can edit or print out the document. The Omni-Reader currently reads the following typefaces: Courier 10, Courier



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12, Letter Gothic 12, and Prestige Elite 12. Disks that will enable the Omni-Reader to read additional typefaces are planned. List price: Omni-Reader \$499, Mac interface disk \$50.

Accessories

■ Alpenlite

3891 N. Ventura Ave.
Ventura, CA 93001
800/235-3410, 805/653-0431

Carrying Cases

Cordura nylon carrying cases for the Macintosh and the Imagewriter printer. Both cases have interior pockets for accessories, foam padding, Velcro closures, and a shoulder strap and a carrying handle. Available in navy blue or pewter. List price: MacLite \$110, PrintLite \$92.50.



PrintLite Carrying Case, Alpenlite

Dust Covers

Nylon dust covers for the Macintosh, keyboard, external drive, and the Imagewriter. The covers are available in royal blue or pewter. List price: Macintosh cover \$17, keyboard \$10, external drive \$8, Imagewriter \$11.

■ Computer Accessories Corporation

7696 Formula Pl.
San Diego, CA 92121
619/695-3773

Macintosh Kit

Two accessories: MouseMat, an 8½- by 11-inch plastic mat that provides a non-slip surface for the mouse; and QuickStand, a 1¾- by 7¼-inch two-level disk holder. List price \$29.95.



QuickStand, Computer Accessories

■ Diversified Manufacturing, Inc.

4722 E. Eighth St.
Wichita, KS 67208
316/683-4265

Hardcover

A rigid cover that protects the keyboard from dropped objects, as well as from dust, dirt, and spilled liquids. The cover is made of vacuum-formed plastic and matches the color of the Macintosh and its system components. List price: \$17.95.

■ I/O Design, Inc.

19 Lafayette St.
Rumson, NJ 07760
201/747-0943

Imageware Carrying Case

A carrying case for the Imagewriter printer. The case is styled to match Apple's Mac Sac Macintosh carrying case. The Imageware case is made of Cor-

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I/O Design

dura nylon and lined with high-density foam. The interior is brushed nylon in a plaid design. The case has a pocket in the inside flap for storing printer paper. Available in navy blue and black. List price: \$69.95.

MicroRain Corporation

P.O. Box 96008, Dept. 150
Bellevue, WA 98009
800/547-3000, 503/684-3000
in Oregon

MacStation

A desktop organizer that lets you place the Macintosh and various peripherals and accessories (mouse, printer, disks, manuals, and external drive) in a workstation that oc-



MacStation, MicroRain Corporation

cupies 20 percent more desk space than the Mac itself. The plastic stand is the same color as the Macintosh and provides enough space between the stand and the Mac for adequate ventilation. The printer rests on top of the stand, which includes a slot for storing continuous-feed paper. MacStation has two large and two small storage cubicles; the large cubicles have movable shelves. Access to the Mac's Reset switch is provided through the unit. List price: \$95.

Vikor Company, Inc.
55 Lake St., P.O. Box 3123
Nashua, NH 03061
603/889-8530

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A floppy disk head cleaner for 3½-inch drives. The Cleaning Disk removes ferric oxide contamination and traps debris that can impair a drive's read/write capabilities. You insert the Cleaning Disk into the drive for about a minute each week. The disk dry-cleans without abrasives and traps debris internally. List price: \$39.95.

Macware News uses information provided by manufacturers; it does not evaluate products or corroborate manufacturers' claims. Send a description of your product and a photograph or sample disk to Macware News, Macworld, 555 De Haro St., San Francisco, CA 94107, 415/861-3861. □

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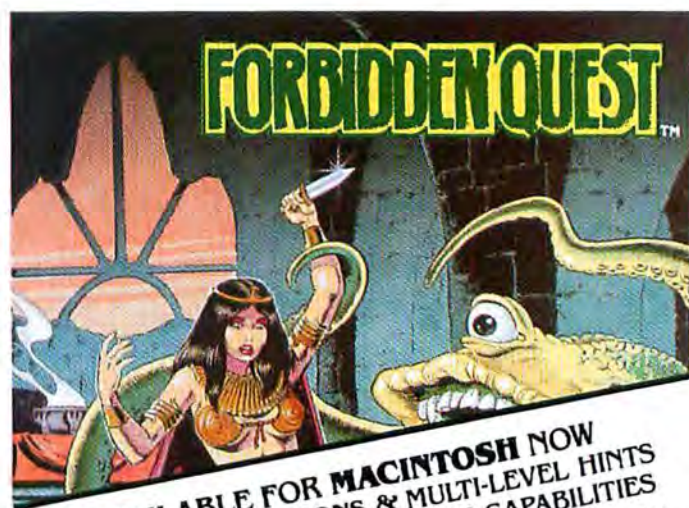
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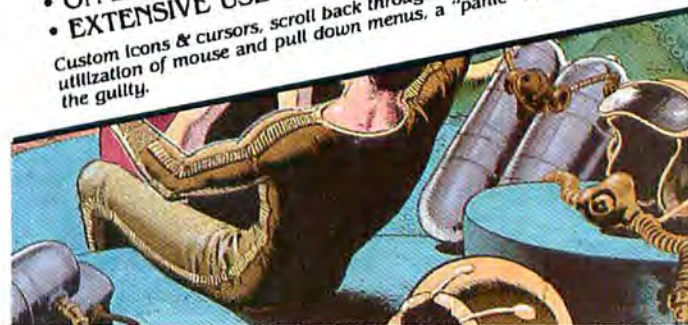
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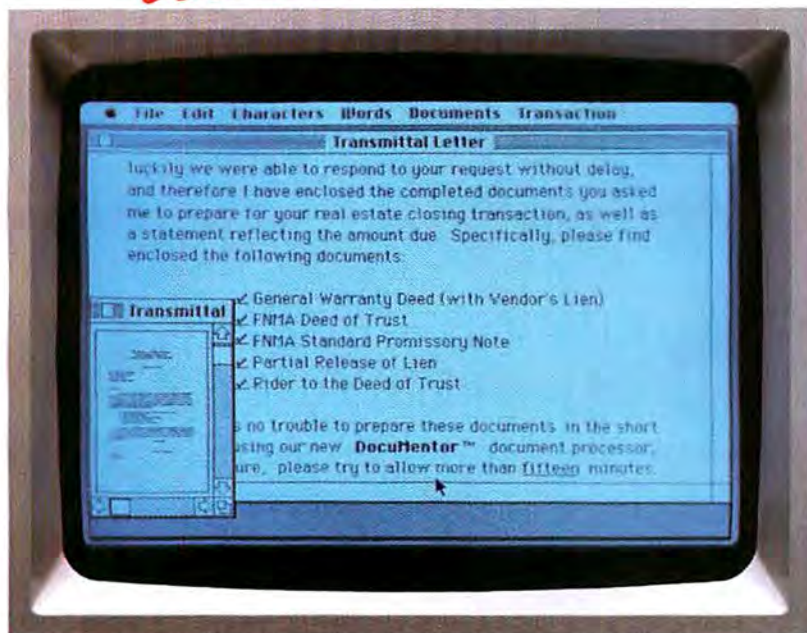


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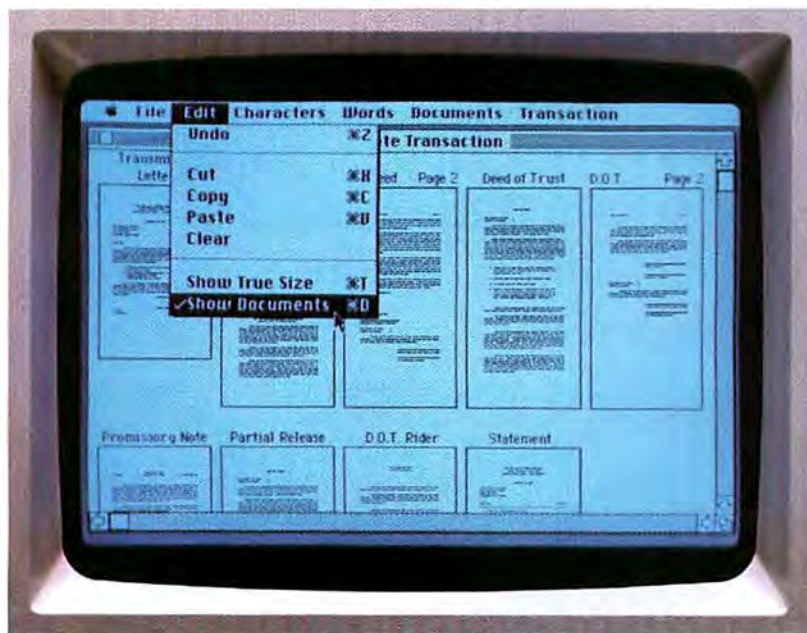
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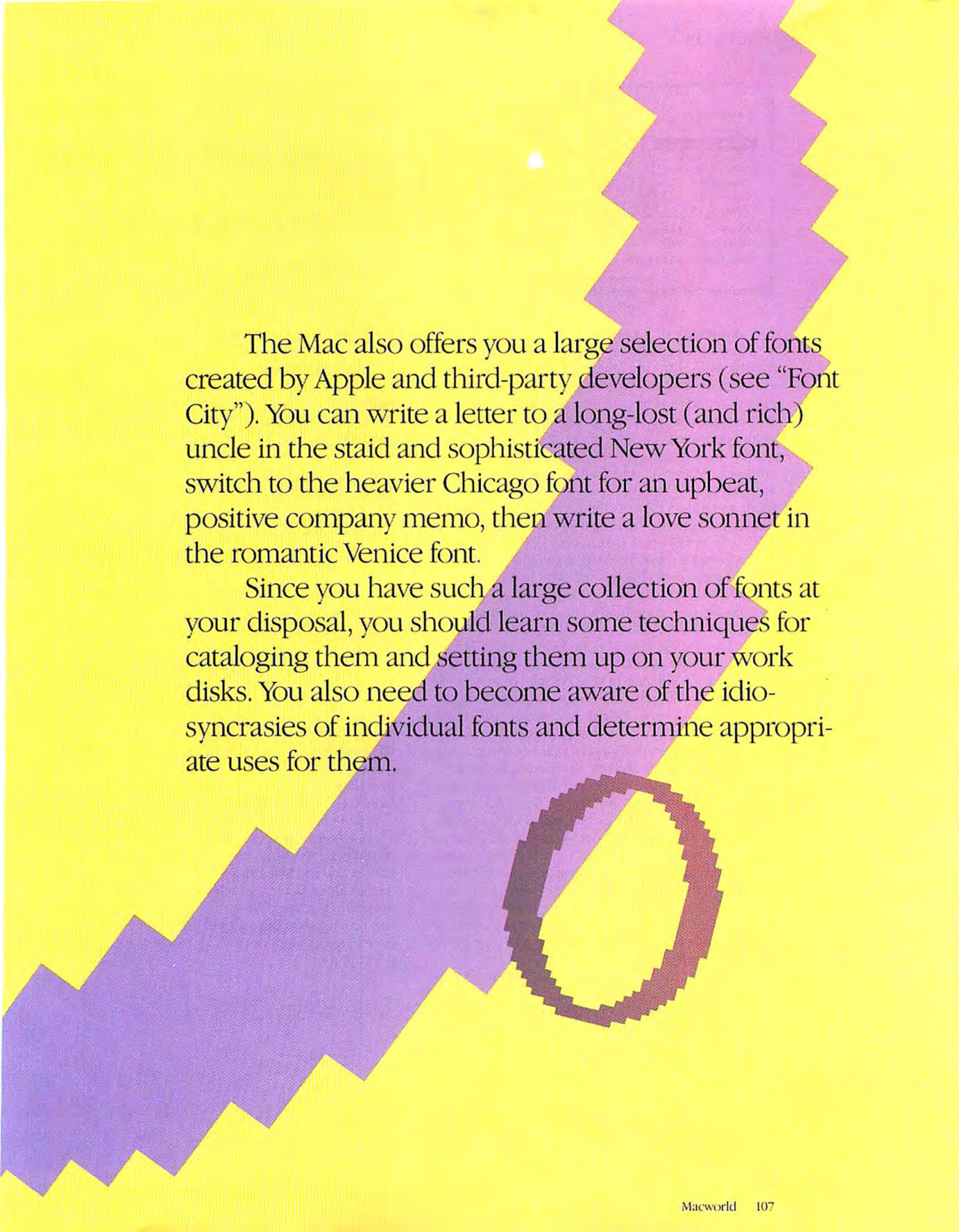
Making the Most of the Mac's Fonts

Gordon McComb

Think how boring the world would be if there were only one of everything—one kind of fruit, one kind of music, one kind of pizza. Yet for years people have been forced to stare into the video displays of their personal computers and see only one kind of typeface.

Then came the Macintosh. No other personal computer can match the Mac when it comes to displaying and printing a variety of typefaces, or fonts. Granted, other computers can produce elaborate fonts on paper, but only when they use special font-generating software and are connected to a special printer. These computers can't display ornamental fonts and unique type styles, such as italic or outlined text, on screen.

The Macintosh is a genuine "what you see is what you get" word processing system. The fonts you see on the screen are the fonts you get when the text is printed by the Imagewriter. This visual fidelity gives the feedback you need to make informed decisions about the appearance of your documents before you print them.

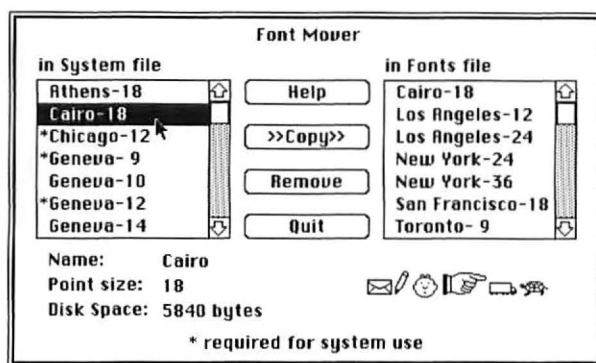


The Mac also offers you a large selection of fonts created by Apple and third-party developers (see “Font City”). You can write a letter to a long-lost (and rich) uncle in the staid and sophisticated New York font, switch to the heavier Chicago font for an upbeat, positive company memo, then write a love sonnet in the romantic Venice font.

Since you have such a large collection of fonts at your disposal, you should learn some techniques for cataloging them and setting them up on your work disks. You also need to become aware of the idiosyncrasies of individual fonts and determine appropriate uses for them.

Figure 1

You can free up disk space by using the Font Mover to remove fonts from the System file. Fonts marked with an asterisk cannot be removed because the Mac needs them to display menus, file names, dialog and alert box messages, and other text used by the operating system.



Anatomy of a Font

Perhaps the best way to begin exploring the Mac's fonts is to see how the Mac builds them. Most computers store the bits and bytes used to generate text on a chip wired to the computer's integrated circuit board. When you press a key, the image of the character stored on the chip is sent, or "printed," to the screen. Unlike these computers, the Mac stores its fonts in the software. When you select a font, the set of characters is sent from the System file on disk into the Mac's memory (unless the specified font has previously been loaded into memory during a work session). Because the Mac's fonts are not frozen on a silicon chip, you can add or remove them from the System file using the Font Mover utility, which is supplied free by Apple (and found on the Macintosh System disk).

Each font is contained in its own little packet—a kind of electronic cell—within the System file. Think of the fonts as being stored like individual pieces of paper in one large manila folder. On each font "page" are bit images, a collection of dots (pixels) of every character the Mac can reproduce in a particular font and font size: the alphabet (lower- and uppercase), numerals, punctuation marks, and special characters.

The Mac not only displays a variety of fonts, it displays them in different sizes. In typographical language, these sizes are expressed in points (1 point is equal to $\frac{1}{72}$ of an inch). *MacWrite*'s standard fonts range from 9 to 24 points, while some applications, such as *MacPaint*, allow fonts as large as 72 points. This sizing convention means that a 12-point font measures approximately $\frac{1}{6}$ (or $\frac{1}{6}$) of an inch, as measured from the top of the ascenders (the tops of the tall letters) to the bottom of the descenders (the bottoms of small letters such as *y* and *j*). Typographically, the Mac's fonts are accurate in this regard (see the figure "Font Anatomy").

Where the Mac's fonts vary from commercial typographical standards is in the distance between successive lines of type. This distance, called *leading*, is usually adjustable in increments of points and frac-

tions of a point. Leading is measured from the base line (the imaginary line on which the characters sit) of one line of characters to the base line of the next line of characters. The text you are reading, for example, is 10-point type set on 11 points of leading. On the Mac, as on a typewriter, you can set leading in multiples of a fixed measurement. Using the 6 lines/inch option in *MacWrite*, the leading for single-spaced text is 12 points. Using $1\frac{1}{2}$ -inch spacing yields a leading of 18 points, and double-spaced text yields 24 points of leading. By contrast, the default settings in *MacWrite* give you a fixed leading keyed to the font and point size, such as single-spaced 12-point Geneva text set on 16 points of lead (4 points of extra leading) and 24-point Geneva text set on 32 points of lead.

Calling Fonts

When you start up an application, the Macintosh pulls into memory from the System file only those fonts that it needs at the moment. With *MacWrite*, for example, the Mac initially pulls in the Chicago-12 and

To save disk space, carefully consider which fonts and font sizes you need for a particular application.

the Geneva-12 fonts. Chicago-12 is used for the menus, the menu items, and the messages in dialog and alert boxes. Geneva-12 is the default application font; *MacWrite* always starts up untitled (new) documents with Geneva-12. In the future, a feature may be included that allows you to change the default application font from Geneva-12 to a font of your choice.

You change fonts within an application by selecting one of the choices listed in the Font menu. When you select a new font, you may have to wait a few seconds while the Mac brings it into memory. (There is never a delay when you select the Chicago font because the Mac keeps it in memory.) The Mac may retain previously selected fonts in memory, or it may have to swap a font or two to provide space for a newly selected font.

**Figure 2**

The Fonts file icon appears on the desktop after you quit the Font Mover. Each Fonts file contains the dot patterns of the fonts copied into the file. You can also use the Font Mover to add fonts from the Fonts file to the System file.

With a 512K Mac, you can keep more information in memory, so some of the delays associated with a 128K Mac can be avoided. If you load the entire contents of the System file into a 512K Mac using RAM disk software, you won't experience any delays when you change fonts.

The Font Mover

The amount of disk space occupied by each font is an important consideration when you are setting up your workdisks, especially on a single-drive Mac. Maintaining a full complement of fonts on disk can eat up more than 100K of disk space. A 12-point font, for example, takes up about 3K, a 24-point font uses about 7K or 8K, and a 36-point font can occupy 13K or more of disk space (see the table "Font Bytes").

A two-drive Mac gives you more flexibility in the way you manage your fonts. You can create a startup application disk with a System file that contains 10 to 20 fonts and keep your documents on a data disk in the external drive. With a hard disk drive, you can store a bundle of fonts and still have ample space left for several applications and documents.

But that doesn't mean you should load up your disks with more fonts than you need. Disk space is like money; just because you have a surplus doesn't mean you should waste it on items you never use. To save disk space, you should carefully consider which fonts and font sizes you need for a particular application. With the Font Mover utility, you can remove fonts or copy them to a special document called a Fonts file and store them on another disk. These fonts are thus available for installation in the System file of any disk.

To remove fonts you don't need from the System file, the Font Mover must reside on the same disk as the System file you want to modify. When you open the Font Mover, a window is displayed with two lists: "In System file" and "In Fonts file" (see Figure 1). You select a font by clicking on it, and several fonts by dragging the pointer over them or by holding down the Shift key while you click on other fonts. You delete a font by clicking the Remove button. When you select a font, the font's name, point size, and the number of bytes it occupies are displayed.

If you want to copy a font into a Fonts file before you remove it from the System file, select the font and then click on the Copy button before clicking on the Remove button. When you quit the Font Mover, the System file is updated and the Fonts file icon appears on the desktop (see Figure 2). Then you can move the Fonts file to a separate disk for safekeeping.

After you copy the Fonts file to another disk, remember to delete it from your original disk to gain additional disk space. You'll note that four fonts—Chicago-12, Geneva-9 and -12, and Monaco-9—have asterisks in front of their names. These fonts cannot be removed from the System file because they are required for menus, document names, and the messages in dialog and alert boxes.

New York 9, 10, 12
Geneva 9, 10, 12
Chicago 12
Toronto 9, 10, 12
Monaco 9, 12

Reading fonts

Athens 18
London 18
Venice 14
San Francisco 18

Decorative and occasional fonts

New York
14, 18, 24, 36
Geneva
14, 18, 24
Toronto
14, 18, 24

Display fonts

Figure 3

The fonts and font sizes on the Mac can be categorized according to their functions. This list places Apple's Macintosh fonts in three groups: reading fonts for text, decorative and occasional fonts for special emphasis, and display fonts for headlines and titles.

Custom Font Disks

Most application disks come with their own System files, and quite often the creator of the application will have chosen a special group of fonts for use with the program. For example, only the standard system fonts, plus Seattle-10 and -20, are included with *Micro-soft Multiplan*; no practical purpose would be served by including decorative fonts, such as San Francisco and Venice, in a spreadsheet program. Of course, you can use the Font Mover to add fonts to *Multiplan*'s System file.

Since *Multiplan*'s work environment doesn't include a Font menu, you cannot select a font with the application. If you want to install a smaller font in *Multiplan* to get more information on a single spreadsheet, you must remove the default application fonts—Seattle-10 and -20—and add Geneva-9 and -18. The program then assumes that Geneva-9 is the default application font. (Seattle-20 and Geneva-18 are included in the System file because the Mac uses them to print spreadsheets in high resolution.) But be sure to save whatever fonts you remove in a Fonts file in case you wish to reinstall them.

Application programs like *MacWrite*, *MacPaint*, *Filevision*, and *MacDraw* handle fonts in a more flexible way than *Multiplan*. These programs allow you to choose a font from a Font menu. You might write a formal letter with *MacWrite* using New York-12 and then cram a lot of information on one page using Geneva-9, single-spaced. With these applications, the choice of which fonts to keep and which fonts to remove depends on your preferences. If you don't plan to use the San Francisco font much, delete it. You might want to make a skeleton *MacWrite* or *MacPaint* disk containing just the required system fonts and perhaps one or two other fonts you use frequently. You can reinstall different fonts when the need arises. If you use different sets of fonts regularly in your work, you may want to create several versions of one application disk with System files designed for the task at hand.

Let's use *MacWrite* as an example. On one disk, you could store the system fonts and the "writing" fonts, New York and Geneva (see Figure 3). A serif font (serifs are the short lines that extend from the bottoms and tops of characters), such as New York, is a good choice for business letters and formal documents. And a more modern-looking sans serif font, such as Geneva, is suitable for personal correspondence. You could then use this disk whenever you write letters.

On another *MacWrite* disk, you could store the system fonts and several large display, decorative, and occasional fonts—Athens, Cairo, Venice, London, Los Angeles, or any of the unique fonts available from third-party companies. This disk can be used for special purposes, such as creating flyers and report covers (see Figure 4).

Font Bytes

Font	Point Size	Disk Space in Bytes
Athens	18	4630
Cairo	18	5840
Chicago	12	2940
Geneva	9	2152
	10	2200
	12	2734
	14	3568
	18	4820
	20	5848
	24	7568
London	18	3212
Los Angeles	12	2440
	24	6444
Monaco	9	2026
	12	2464
New York	9	2004
	10	2200
	12	2734
	14	3352
	18	4516
	20	5260
	24	6832
	36	13780
San Francisco	18	2984
Seattle	10	2410
	20	6302
Toronto	9	2308
	12	3034
	14	3658
	18	5688
	24	8854
Venice	14	3588

Font Bytes

When you are determining the fonts and font sizes you want to keep on disk, you should consider how often you will use a font and how many bytes the font occupies on disk.

Font

New York
Chicago
✓Geneva
Monaco

Font

New York
Cairo
Chicago
✓Geneva
Monaco
Athens
London
Los Angeles
Venice

Figure 4

You can create custom System files to better suit your work needs. For word processing applications, you may need only the basic "writing" fonts—the system fonts and the New York font. For writing tasks that require more varied expression, you can include decorative fonts, such as Venice, and display fonts, such as Athens.

Keep in mind that if you create a document with a customized font disk, you'll have to use that same disk whenever you edit or print the document. With most applications, the fonts used in the original version must be present in the System file on the disk when you're editing or printing (the Mac uses Geneva to replace fonts that aren't present in the System file). For example, if you cut and paste a *MacWrite* document created with a font or a set of fonts not resident in the System file of the disk to which you are transferring the document, the text written in uninstalled fonts will be converted to the default application font (Geneva).

In some cases you can overcome that problem by cutting text created in *MacPaint* into *MacWrite* or *Microsoft Word* documents. *MacPaint* clippings arrive in *MacWrite* or *Word* as independent "windows" so the text is unaffected if a font is not available in the host disk's System file. Unfortunately, you cannot insert text in the area surrounding a *MacPaint* clipping. If you are simply inserting a title or some other form of display type, this limitation may not be a problem.

MacPaint treats characters as "drawings" rather than as characters bound to a particular font. If you work on a text document in *MacPaint* using a set of fonts on one disk and then work on the document on another disk with a different set of fonts, the text will remain in its original font even if that font isn't in the current System file.

Creating a Font Library

If you begin collecting a large number of fonts, you can create a master library by storing each font in a separate Fonts file on disk. To create a Fonts file, select a font in one size or in all its sizes, copy it into the Fonts file, and then quit the Font Mover. This procedure may seem time-consuming, but you'll have each font readily available for transfer to another disk without worrying about running out of disk space when you move the Font Mover and a huge Fonts file onto the disk you want to modify.

Another way to organize your fonts is by creating Fonts files that contain sets of fonts used for similar tasks (see Figure 5). You could, for example, have a Fonts file called Decorative Fonts that includes Athens-18, London-18, Venice-14, and San Francisco-18, and another called Display Fonts, which contains New York-14, -18, -24, and -36; Geneva-14, -18, and -24; and Toronto-14, -18, and -24.

When you want to install a Fonts file, such as Decorative Fonts, in a System file, move the Font Mover

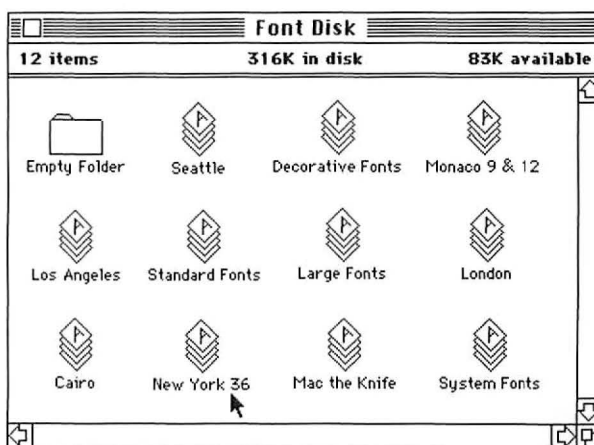


Figure 5

When you create a font library, it's a good idea to store fonts in special groups tailored to specific tasks. If you can't fully identify the contents of a file by its name, you can list the fonts within a file in the Get Info window.

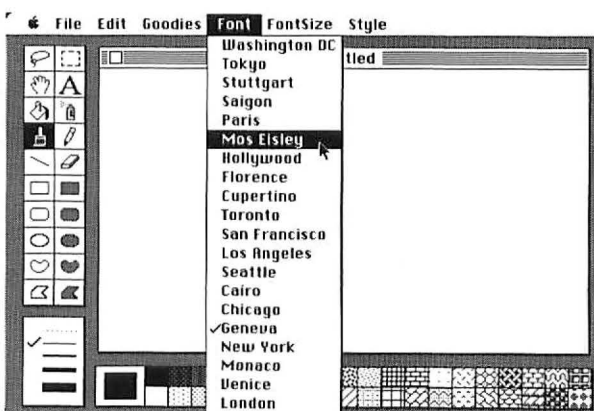


Figure 6

You can load as many fonts as you want in the System file—up to 256 fonts, each in 128 font sizes. However, applications such as *MacWrite* and *MacPaint* can display only 20 fonts in their Font menus.

and Decorative Fonts file onto the appropriate disk. Then double-click on the Decorative Fonts icon to load the contents of the file into the Font Mover. Technically, the Mac can store 256 different fonts, each in 128 sizes.

However, you are limited to a maximum of 20 fonts in programs such as *MacWrite* and *MacPaint*. The Font menus in these applications can display only 20 font choices (see Figure 6). Programs such as *Filevision* and *MacDraw* allow less space for displaying font names in the pull-down menus because font size information is included in the same menu. The System file can accept more fonts, of course, but they won't be displayed in the menu. As you may have guessed, fonts are pretty much useless if you can't choose them from a menu.

Word uses another strategy for font selection. When you want to change a font, you select the *Formats* option from the *Character* menu. (Alternatively, you can use a keyboard shortcut.) A dialog box appears that lists the fonts and font sizes available in the System file. You can store as many fonts in *Word*'s System file as memory allows.

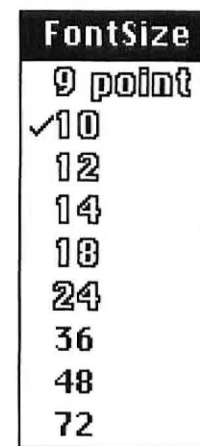


Figure 7

Point sizes that are outlined represent fonts that the Mac has installed in the System file. Point sizes in standard text are scale fonts, which the Mac must create by enlarging or shrinking installed fonts.

Figure 8

This list shows the high-resolution print quality of the standard fonts available from Apple. When these fonts are installed in the System file, their point sizes are shown in outlined text in the Font Size menu, indicating that they are not scale fonts and will look best in those sizes.

Athens-18 abcdefghiJKLMNOPQ12345

Chicago-12 abcdefghiJKLMNOPQ12345

Geneva-9 abcdefghiJKLMNOPQ12345

Geneva-10 abcdefghiJKLMNOPQ12345

Geneva-12 abcdefghiJKLMNOPQ12345

Geneva-14 abcdefghiJKLMNOPQ12345

Geneva-18 abcdefghiJKLMNOPQ12345

Geneva-24 abcdeFGHIJ12345

London-18 abcdefghiJKLMNOPQ12345

Los Angeles-12 abcdefghiJKLMNOPQ12345

Los Angeles-24 abcdeFGHIJ12345

Monaco-9 abcdefghiJKLMNOPQ12345

Monaco-12 abcdefghiJKLMNOPQ12345

New York-9 abcdefghiJKLMNOPQ12345

New York-10 abcdefghiJKLMNOPQ12345

New York-12 abcdefghiJKLMNOPQ12345

New York-14 abcdefghiJKLMNOPQ12345

New York-18 abcdefghiJKLMNOPQ12345

New York-24 abcdeFGHIJ12345

San Francisco-18 abcdefghiJKLMNOPQ12345

Toronto-9 abcdefghiJKLMNOPQ12345

Toronto-12 abcdefghiJKLMNOPQ12345

Toronto-14 abcdefghiJKLMNOPQ12345

Toronto-18 abcdefghiJKLMNOPQ12345

Toronto-24 abcdeFGHIJ12345

Venice-14 abcdefghiJKLMNOPQ12345

One Size Doesn't Fit All

If you're an astute Mac user, you've probably noticed that some of the listings in the Font Size menu are shown in outlined text, while others are listed in standard text (see Figure 7). The outlining indicates that the font is installed in the Mac's System file in those sizes. These are the Mac's standard fonts and sizes (see Figure 8). The sizes shown in standard text don't exist in the System file and must be computed by the Mac. If you select a font size shown in standard text, the Mac looks in the System file for the specified font in a size closest to the requested size, which is created by reduction or enlargement. These uninstalled sizes are what Apple calls scale fonts.

Few fonts are available in every size. In fact, of the fonts distributed by Apple, only the New York, Geneva, and Toronto fonts are available in all sizes (from 9 to 24 point). Other fonts such as Monaco, Chicago, Athens, and Cairo, have from one to three sizes installed.

No matter which sizes are included in a font series, you can still write text in any size. This feature maintains consistency but also presents some problems. The main problem with using scale fonts is that the Mac enlarges or reduces fonts by adding or subtracting pixels—the small dots that make up the images on the Mac's screen. To create 24-point characters from a 12-point font is easy—the Mac just adds another pixel for every one already there. The same scaling technique is used for reducing fonts—the Mac simply halves the number of dots uniformly (see Figure 9). For the most part, fonts created by even-size enlargement or even-size reduction look acceptable on the screen and on paper. Even so, small fonts that are grossly enlarged (9-point Monaco enlarged to 72 points, for example) can look so ragged that they are unattractive.

But what about enlarging a 12-point font to 18 points? It's no longer a simple matter of doubling or halving the number of dots. Rather, the Mac must selectively add pixels to certain parts of the character while maintaining its overall shape and image. Odd-size reductions and enlargements often produce strange-looking fonts (see Figure 10). Invariably, the characters have uneven thicknesses and ragged edges.

In addition, the Macintosh must do some extra computing to create a font in a size it doesn't have. It's not unusual to type away in an application like *MacWrite* and be five to ten keystrokes ahead of the Mac while it's calculating the dimensions of a scale font you've selected. Printing text in a scale font is also slower than printing it in an installed font.

What can you do to avoid these problems? Not much, unfortunately. There's no way to attach a supercharger to the Mac to make it create scale fonts faster or with less distortion. Only some extremely elaborate programming can improve the way the Mac enlarges

(continues on page 118)

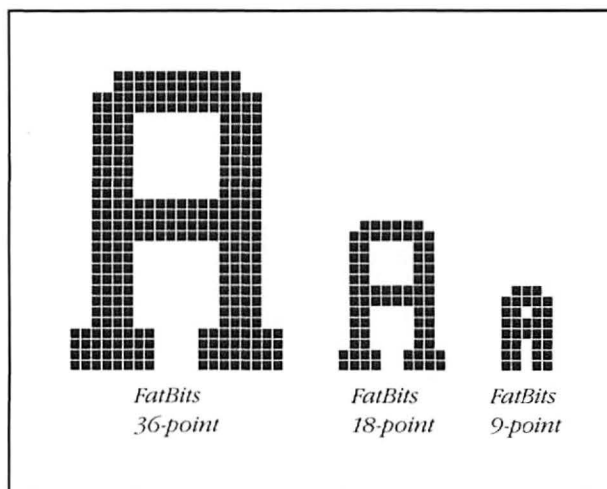


Figure 9

The Mac has the dot pattern for the Athens font in only one size—18 points. To create a 9-point Athens, the Mac halves the 18-point size. To create 36-point Athens, the Mac doubles the 18-point pattern. Half-size and double-size reduction and enlargement usually look presentable. (The FatBits images are reduced 50 percent.)



Figure 10

Odd-size reduction and enlargement usually yield unattractive characters. Scaling installed fonts, such as enlarging 18-point Athens to 24 points, for instance, has limited usefulness. (The FatBits image is reduced 50 percent.)

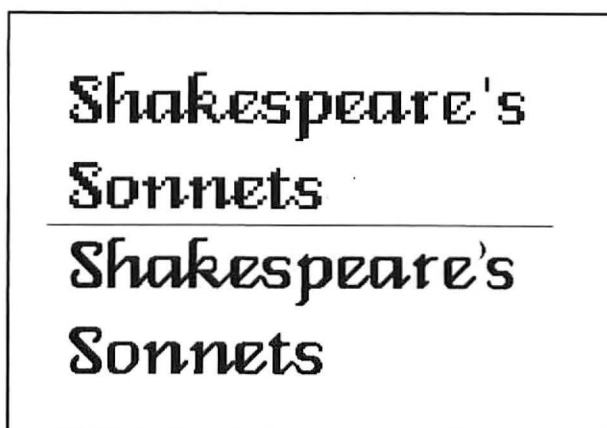


Figure 11

You can improve the appearance of decorative and display fonts by selectively adding (or removing) dots to (or from) characters in MacPaint's FatBits mode to smooth out the rough edges.

Font City

As you can see from the collection of more than 80 typefaces shown here, Macintosh fonts are proliferating. There are dozens of additional fonts floating in the public domain, and others are being created by commercial developers. Many developers have continued Apple's tradition of naming fonts after cities, which gives your Font menu a uniform, though geographical, look.

Here are a few tips that may prove helpful when you are installing new fonts. Fonts larger than 24 points can be used in *MacPaint* and *MacDraw*, but *MacWrite* can only handle fonts up to 24 points. Remember, installing a large number of fonts, especially in bigger sizes, consumes substantial disk space. So refrain from having your disks filled with frivolous fonts.

You should keep backup copies of all your font disks. Otherwise, a font removed inadvertently from the System file is gone forever. (A final note: the two Hebrew fonts listed here cannot be typed in from right to left, so typing lengthy documents is a laborious process.)

ClickArt Letters
T/Maker Graphics
 2115 Landings Dr.
 Mountain View, CA 94043
 415/962-0195
 List price: \$49.95

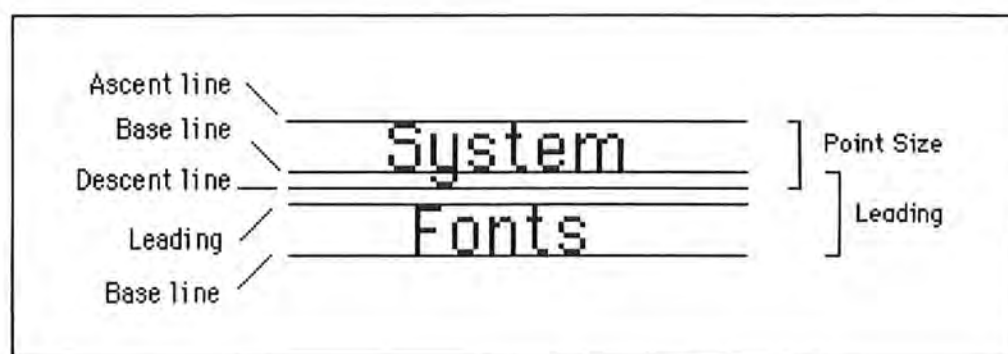
Fluent Fonts
Casady Company
 P.O. Box 223779
 Carmel, CA 93922
 408/646-4660
 List price: \$39.50

Mac the Knife, Vol. 2
Miles Computing, Inc.
 7136 Haskell Ave. #300
 Van Nuys, CA 91406
 818/994-7901
 List price: \$49

MacFonts
DNA, Inc.
 9207 McAfee Dr.
 Houston, TX 77031
 713/778-9270
 List price: \$24.95

MacGreek/MacHebrew/
MacKana
Linguists' Software
 P.O. Box 28
 Mount Hermon, CA 95041
 408/335-2577
 List price: \$99.95 each

UltraFonts
Malon Products
 2306 Cotner Ave.
 Los Angeles, CA 90064
 213/829-4436
 List price: \$19.95



Font Anatomy

This diagram shows the anatomy of a 24-point font. The distance from the ascent line to the descent line measures 24 points. The leading, the distance from base line to base line, is 32 points.

Fluent Fonts

Micro-9 (10,12,18,20 not shown)

Micro-24

Bodoni-9 (10,12,14,18,20 not shown)

Bodoni-24

Des Moines-12

Des Moines-24

Slim-18

Slim-24

Round-12

Round-24

Nordic-12

Nordic-24

Cyrillic-12 АЪВГДЕЖЗИКЛМН

Cyrillic-18 АЪВГДЕЖЗИКЛМН

Hebrew-12 אבגדהוזחטיפ

Hebrew-24 אבגדהוזחטיפ

Electronic-12 ⚡ ⚡ ⚡ ⚡ ⚡ ⚡ ⚡

Electronic-24 ⚡ ⚡ ⚡ ⚡

Melrose-12

Melrose-24

Matrix-24

EIRE-12

EIRE-24

CHUBBY-24

Banner-24

Banner Italic-24

STRIPE-24

Speed-24

SILICON-24

OLD WEST 36

This font is reduced 25 percent from actual size.

MacGreek/MacHebrew/Mackana

Hebrew-12 אבגדהוזחטיפ

Hebrew-24 אבגדהוזחטיפ

Greek-12 ΑΒΓΔΕΖΗΘΙΚΛΜΝΞΟΠ

Greek-24 ΑΒΓΔΕΖΗΘ

Japanese-12 あいうえおかきくけこ

ClickArt The fonts below are reduced 25 percent from actual size.

Basel-48
Boston-48
 Calgary-36
 Cambridge-36
Dallas-48
Fargo-48
 Houston-36

New Haven-24
New Haven-36
 Oxford-24
Oxford-36
Plymouth-36
 Quebec-48
Sydney-24
Vegas-48






UltraFonts

AMAZON-18	Columbia-18	HUDSON-18	Thames-18
Willamette-18	Congo-18	Potomac-18	STUX-18
Yukon-18	Delaware-18	Rhine-18	Colorado-10
		Seine-18	

MacFonts

Austin-18	Houston-12
Austin-24	Houston-14
DALLAS-14	Houston-18
Tampa-14	Houston-24
Tampa-18	San Marcos-14

Boulder-24
Galveston-18
Uvalde-24

Montrose-18     

BOISE-18

Camelot-18

Carmel-24

Greenbay-18

Las Vegas-12

Las Vegas-24

Liverpool-18

Rome-18

San Diego-24

Woodsstock-12

Sunnyvale-12

Sunnyvale-24

Cupertino-12

Cupertino-24

Sydney-12

Sydney-24

Saigon-12

Saigon-18

Saigon-24

Tokyo-14






Kawasaki-14 カトテコオ

Florence-12

Florence-24

Mos Eisley-12

Mos Eisley-24

Manhattan-12     

Manhattan-24

Hollywood-12

Hollywood-18

Hollywood-24

Stuttgart-12 (9 and 18 not shown)

Stuttgart-24

PARIS-12 (9 and 18 not shown)

PARIS-24

Montreal-12 (9 and 18 not shown)

Montreal-24

Copenhägen-12 (9 and 18 not shown)

Copenhägen-24

Dallas-12

Dallas-18

Dallas-24

Washington DC-12 (9,18 not shown)

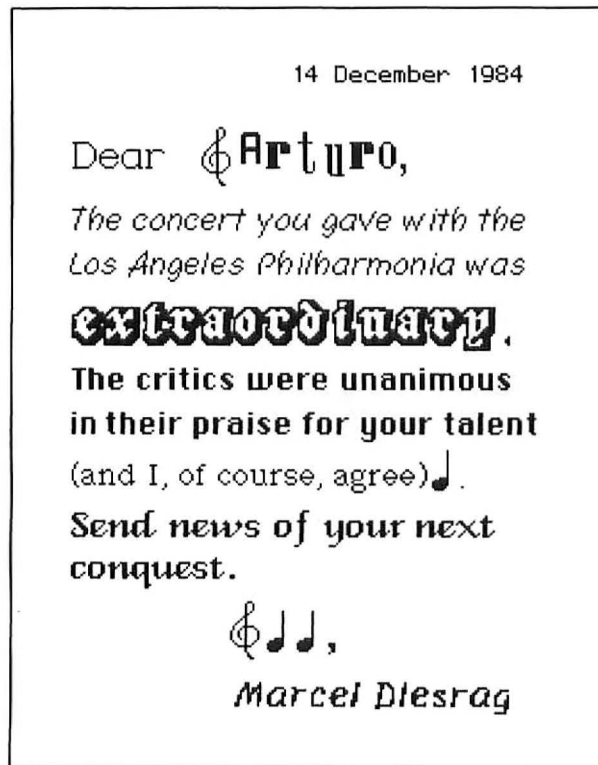
Washington DC-24

Figure 12

The Mac's smallest font size is 9 points, but you may need a smaller font size. A 5-dot-high font composed of uppercase characters serves that purpose well.

**Figure 13**

The Mac offers a wide variety of fonts; however, beware of mixing too many fonts and type styles. Let the nature of the material guide you in selecting fonts and type sizes.



(continued from page 113)

and reduces fonts (and storing every font available in all sizes takes up way too much room). The key to good-looking text is to avoid using scale fonts whenever possible.

A way exists to improve the look of decorative and display types. If you are using *MacPaint*, you can go into *FatBits* to smooth out the edges of characters (see Figure 11). You can even use *FatBits* to construct characters smaller than 9 points (see Figure 12).

Using Fonts with Discretion

Some people go overboard with their use of fonts. Unless you're doing something special, such as an ad mockup, don't use too many fonts, font sizes, and special effects (boldface, italics, underlining, outlining, and shadowing) in one document (see Figure 13). Let the nature of the material guide your selection of fonts, sizes, and styles. San Francisco font, for example, is appropriate for a ransom note or a wild party invitation, but not for a memo to your supervisor or a term paper.

Fonts and the High-Resolution Imagewriter

To get the Mac's fonts on paper, you must use an Apple Imagewriter or some other compatible printer. Letter quality printers, which print "solid fonts" like a typewriter, can't reproduce the Mac's fonts. The Mac allows you to choose among three print resolution modes when you use the Imagewriter: draft, standard, and high resolution. The draft setting places the Imagewriter in low-resolution dot matrix print mode. Draft printing is much faster than standard or high-resolution printing, but the fonts don't print as they appear on the screen because the Imagewriter uses fonts stored in its ROM to print documents.

The standard print mode reproduces fonts pretty much as they appear on the screen (see Figure 14). If the screen displays a scale font in a ragged, uneven form, the Imagewriter prints the font in the same way. Printing in high resolution hides many of the blemishes inherent in scale fonts (see Figure 15). To print in high resolution, the Mac searches for a font size twice as large as the one specified and then scales it down to half-size for printing.

When printing 12-point New York text in high resolution, for instance, the Mac uses New York-24. If there is no font twice as large as the one specified, the Mac searches for the next largest size. The results aren't quite as good as when the Mac has an exact double-size font to work with, but the printed text doesn't look too bad. If the font is available in only one size, the Mac blows up the font to twice that size for printing. This doubling and halving action, which prints four times as many dots as in standard resolution, greatly improves the appearance of poorly formed fonts. In addition, the gaps and ragged edges in the very large fonts are filled in, making them easier to read.

To get the most out of high-resolution printing, it's a good idea to keep the large fonts in the System file. If you don't use the large fonts and don't need to print in high resolution, you can delete the large font sizes. Remember, the bigger the font, the more room it takes up in the System file: the large fonts use from 8K to 13K of disk space.

Once again, *MacPaint* is a little different. It doesn't produce high-resolution text by using large fonts. Instead, when printing in Print Final mode, *MacPaint* simply goes over each part of the image twice. So if you don't often use the large display fonts with *MacPaint*, delete them from the System file (of all Mac applications, *MacPaint* needs the most room on its disk to work properly). *MacPaint* will still be able to create extra-large fonts, of course, but the characters will be formed by enlarging smaller fonts.

While you're trimming the size of the System file on your *MacPaint* disk, you can delete the Imagewriter file (like the System file, it's located in the System Folder). *MacPaint* doesn't use the Imagewriter file to print drawings, so you can gain an extra 17K of disk space. For best results, use a new or reasonably new ribbon to print fonts when you are using standard resolution. Use an older, slightly less inky ribbon when you are printing in high resolution; a fresh ribbon tends to smear the high-density dot patterns slightly.

Using high-quality paper (preferably the kind with 25 percent rag content) gives the best results when you print your documents. Also, you should avoid using high-resolution mode with font sizes under 12-point; the characters have a tendency to fill in excessively.

A Personal Font

Apple and other companies provide a potpourri of fonts, but perhaps you'd like to design your own. Certainly Apple or some enterprising program developers are working on a utility that will allow you to create and edit fonts and include them in the System file. You can look forward to the day when your custom-designed fonts appear in the *MacWrite* Font menu. In the meantime, you'll have your hands full managing the fonts already available for the Macintosh. □

Gordon McComb is the author of the Macintosh User's Guide (Howard W. Sams, 1984) and a frequent contributor to Popular Science and the Computer Buyer's Guide and Handbook.

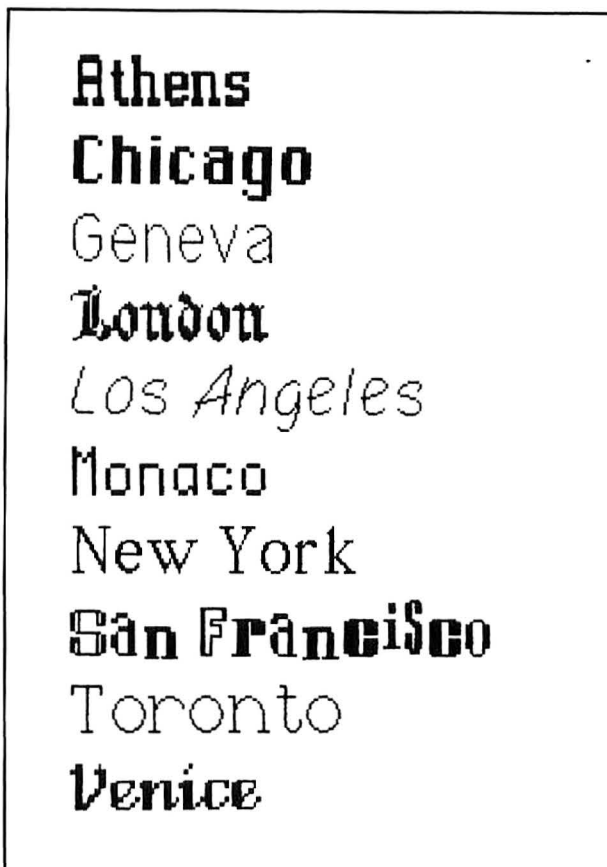


Figure 14
Text printed in standard resolution closely mimics the way text appears on screen, including the rough edges of scale fonts.



Figure 15
Printing in high-resolution mode hides many of the distortions inherent in scale fonts. To print in high resolution, the Mac creates an image of the text with a denser array of dots, so that the Imagewriter lays down more dots. This process makes poorly formed characters look better on paper than on screen.



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COMPLEXITY REDUCED TO SIMPLICITY

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Circle 66 on reader service card



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Backstreets of the MAUG

*A guide to finding your way
through CompuServe's largest
special-interest group*



Art Wilcox

SSALL


By following the road signs in this article you can find your way around the MAUG's numerous commands. The SSALL command, for example, gives you an unrestricted view of all 9 sections of the MAUG.

Have you ever tried to find a new restaurant that is located in an unfamiliar part of the city? Without knowing the street address and with only a vague notion of the restaurant's name, you set out in the spirit of adventure. After a search so thorough that it would rival a police dragnet, you begin to wonder if the restaurant exists at all.

At first, exploring unfamiliar territory is intriguing, but the journey can turn into a nightmare of frustration when you don't know where you're going. Many computer adventurers have traveled the telecommunications byways of CompuServe in search of the MicroNet Apple Users Group, otherwise known as the MAUG, only to find that they were strangers in a strange land. Last month, *Macworld* Contributing Editor Jeffrey Young succumbed to his own curiosity and explored CompuServe and the MAUG (see "Into the Mouth of the MAUG," *Macworld*, December 1984). Like other adventurers before him, he encountered both the initial difficulty of learning to use the MAUG and the joy of discovering an electronic community hall.

The MAUG is one of many Special Interest Groups, or SIGs, that have been set up as electronic forums within CompuServe to serve people with particular interests. While other SIGs focus on subjects ranging from aviation to music, the MAUG is devoted specifically to Apple computers. Using their modems, members meet online to discuss hardware and software problems, pass along industry rumors, and exchange free programs for the various Apple computers, including the Macintosh.

Before your curiosity gets the better of you, setting you off on your own expedition through CompuServe to the MAUG, you'll need to outfit yourself with a modem, a communications package such as *MacTerminal*, and a subscription to CompuServe. Once you're properly



*You can travel
either of two roads to
get to the MAUG.*

equipped, this article can serve as your guide to an exciting new way of using your Mac.

To get started, connect your modem to the Mac's telecommunications port, a power source, and a telephone jack. Then turn the Mac and the modem on. If you use *MacTerminal* from Apple, open the document labeled Communications Services and choose Phone Settings from the Phone menu (see Figure 1). A dialog box appears in which you should set the speed of your modem, indicate whether your phone service is dial or pulse, provide your CompuServe access number, and then click the OK button.

**GO PCS 51**

You can save time by taking the express route to the MAUG. Type the **GO PCS 51** command at the CompuServe Main menu.

Logging On

Most communications programs provide a way to dial a phone number for you. If you're using *MacTerminal*, choose Dial from the Phone menu. Regardless of the type of communications software you have, you should hear first the modem dialing, then a high-pitched tone that might startle you into thinking that aliens are invading your phone line. Finally, either a scratching sound or a pure tone signals that you've made a successful connection. If you use *MacTerminal*, a dialog box should also appear informing you that a connection has been established. If you receive no indication that you've made a successful connection, try dialing again—the number may be busy or disruptive interference may be on the line.

Once you've made a connection, press Return to let CompuServe know that you're waiting to *log on*, or enter the system. When the word "host" appears, type **CIS** and press the Return key. CompuServe then asks you for the ID number and password you received when you subscribed to the information service.

Two Routes to the MAUG

Once you've completed the log-on procedure, the system often greets you with a general interest bulletin explaining new CompuServe services, then shows CompuServe's main menu (see Figure 2). From this juncture, you can travel either of two roads to get to the MAUG. One route takes you on a circuitous drive via CompuServe's menu system; the other is a shortcut that transports you directly to the doorstep of the MAUG with a special CompuServe command.

If you would like to get an idea of the MAUG's position in relation to CompuServe's other services, take the leisurely menu route. You progress through the

menus by choosing an item from the menu by number and pressing the Return key. First choose Personal Computing from the Main menu, then Communications Forums from the Personal Computing menu, and finally MAUG from the Personal Computer Special Interest Groups menu. As you move through these menus, notice the other general interest topics available such as Shopping at Home, and Business and Financial. At some point you may want to explore CompuServe's other services.

If you decide to take a detour from our journey to the MAUG, take a look at the commands listed in the Brief Command Summary (see Figure 3). These commands

Phone Settings

Phone Number

Dial ☒ **Tone** ☐ **Pulse** ☐ **Mixed**

Number of Rings Before Answer

Modem ☐ **Apple 300** ☒ **Apple 1200** ☐ **Other**

Figure 1

MacTerminal's Phone menu lets you specify phone number, type of phone service, and modem speed to facilitate automatic calling with a modem. Clicking the OK button saves the settings.

can help you move around the information service and acquire additional information. The T command is especially valuable to beginners because it returns you to CompuServe's Main menu.

At the Doorstep of the MAUG

When you want to save time, you can take the express route to the MAUG by typing **GO PCS 51** at the prompt indicated by the exclamation point and pressing Return. Once you enter the MAUG, typing your name automatically makes you a member at no charge. After you join the MAUG, one of the first things you see is the Function menu (see Figure 4). This is the MAUG's main or topmost menu. Each menu item has its own specialized submenus from which you choose commands to take advantage of the MAUG's various features.

The MAUG is divided into three sections: the message area, where you can exchange messages with other members; the reference library, which contains free programs, reports, and conference transcripts; and the conference area for participating in typed conversations (see "Chatting with Other Mac Owners"). Before you begin to investigate a particular area of the MAUG, however, you should know how to stop and start whatever process you set in motion.

CompuServe Information Service

- 1 Home Services
- 2 Business & Financial
- 3 Personal Computing
- 4 Services for Professionals
- 5 The Electronic Mall™
- 6 User Information
- 7 Index
- 8 The CompuScholar Challenge

Enter your selection number !
or H for more information.

Figure 2
CompuServe's Main menu allows you to choose from a variety of electronic services, including online shopping (The Electronic Mall), the latest news (Home Services), and stock quotes (Business & Financial).

By pressing **⌘-C** you can stop the last command you gave and choose to return to the previous menu. **⌘-S** temporarily suspends screen activity, and **⌘-Q** continues screen activity. You can also acquire a list of the commands available on the MAUG by typing the letter **I** and pressing Return after the Function menu appears.

The Message Exchange

Have you ever encountered a mysterious and aggravating problem while working with the Mac, but couldn't find a solution using all the resources available to you, including the manual? By leaving a question in the Message area of the MAUG, you can seek help from other Mac owners and programmers. Frequently you will get a response within a couple of hours.

The message system is the electronic equivalent of a giant bulletin board. It holds up to 380 messages at once, and each message remains on the system for two to four days. As members add new messages the old ones are pushed off the system. Many of the most interesting messages, however, are placed in long-term storage in the Reference Library.

Leaving a Message

To leave your first message on the bulletin board, first type the numeral **1** and press Return. Next, in response to the **TO:** prompt, type the user ID number of the person to whom you are sending a message (you gave your own number during the log-on procedure). As you become familiar with the system, you'll undoubtedly learn the ID numbers of various members. Until then, you can get a list of members on the system at the moment by returning to the Function menu and typing **UST-Return**. If you think a message is of general interest to other MAUG members, you can address it to **ALL**. Addressing the message to everyone on the system ensures the largest possible response from the MAUG membership.

After you address the message, the system asks for the subject of your message. Type a short description (24 characters or less) to give readers an idea of the message's content. (For the moment, don't worry about typing mistakes; those can be corrected after you conclude the message,

Brief Command Summary

- T** TOP menu page
- M** previous MENU
- F** FORWARD a page
- B** BACK a page
- H** HELP
- G n** GO directly to page "n"
- N** display NEXT menu item
- P** display PREVIOUS menu item
- OFF or BYE** logs you off

Figure 3
*These commands help you move around in CompuServe. If you find yourself lost while exploring CompuServe's many services, for instance, typing **T** lets you start fresh from CompuServe's Main menu.*

Function menu:

- 1 (**L**) Leave a message
- 2 (**R**) Read messages
- 3 (**RN**) Read new messages
- 5 (**B**) Read bulletins
- 6 (**CO**) Online conference
- 9 (**OP**) Change your SIG options
- 0 (**E**) Exit from this SIG

Enter selection or H for help:

Figure 4
*MAUG's Function menu provides access to every MAUG service—except the Reference Library. Typing **XA** at the Function menu will take you to the library of public-domain software.*

as described below.) The message system doesn't wrap text around, so end each line of your message with a carriage return. Messages can be up to 96 lines long. When you finish typing the body of the message, conclude with an extra carriage return or by typing **␣-Z**.

Editing a Message

Once you conclude the message, the Leave Options menu appears (see Figure 5). With the commands from this menu you can edit any typing errors you've made. To edit messages, select an option from the menu by number or letter and press Return. When you've finished editing the message, you can send it to the intended recipient(s) with the Store command. Until you actually send the message you can use the commands in the Leave Options menu to continue editing the message or to cancel the message altogether.

After you send a message, Compu-Serve automatically informs the recipient of any waiting messages as soon as he or she enters the MAUG. If you regularly compose long or complex messages, you should take the time to learn the additional commands on the Advanced Leave Options

Leave Options Menu:

- 1 (S)** Store the message
- 2 (L)** List the message
- 3 (R)** Replace a line
- 4 (D)** Delete a line
- 5 (C)** Continue entering text
- 6 (A)** Abort the Leave function

Figure 5

After you type a message you plan to leave on the MAUG, the Leave Options menu lets you make changes using the online text editor.

menu. These will provide you with added editing flexibility (see Table 1). To use the additional commands in the Leave Options menu, first type the command abbreviation. Then type the line or message number to be edited as indicated by the information within the brackets.

Once you've stored your message, the system asks for a section number so that your message can be placed in a category such as languages, hardware, software, or communications. Each of the MAUG's three general areas is subdivided by topic into nine sections (see Figure 6). You can see a list of those sections by typing **SN-Return** at the Function menu. Whenever you type the section number at the prompt, your message is placed in that section. You are then returned to the Function menu.

Reading Messages

Leaving messages is only one of several ways you can use the message exchange. You can also use the large collection of messages on the bulletin board to research problems or topics that interest you. The messages are public information and reflect the discoveries and problems of Mac owners like yourself. By learning a few techniques for reading messages, you can quickly scan the message exchange for useful information. Remember that older messages are quickly displaced by newer messages. This rapid exchange of ideas makes the message area of the MAUG one of the best sources for up-to-date information about the Mac.

Before retrieving messages, you can save time by limiting your search to one of the MAUG's nine subsections. If you type **SS** followed by the section number, you limit the display of messages to one of the nine sections. If you've already set the section but you don't want to exclude any messages, the **SSALL** command displays messages from all 9 sections. After you choose a section, you can begin reading by typing the number **2** or the letter **R** at the Function menu. Although both commands perform the same function, they prompt you for information in different ways. If you choose the letter **R**, the system prompts you for a more detailed command called a *subcommand* (see Table 2). If instead you type the number **2**, the system displays the current range of numbered messages and asks you for "a starting message number." At this point you could enter a specific number

SP <topic #> Store private

Sends a message to the specified individual only—no other members can read it. You may also include a topic and topic number, if both you and the addressee have access to it.

L <line #'s> List line(s)

Lists only the specified lines; valuable in editing a long message.

P Preview message

Displays the message as it will appear on the recipient's terminal screen without line number prompts or formatting commands.

E <line #> Edit a line

Displays one line of text and asks for the character string you want to replace; a useful command for making minor changes in a line without reentering the entire line.

D <line #'s> Delete lines

Deletes all lines from the first specified line number through the second.

I <line #> Insert line

Inserts a new line at the designated position; automatically renumbers succeeding lines.

Table 1

The Advanced Leave Options commands are more powerful for composing long messages than the Leave Options menu commands (Figure 5). Advanced options allow you to edit parts of a line and list only part of your message for proofing.

Chatting with Other Mac Owners

Some people install CB radios in their cars so that they can call for help if they become stranded on the roadside. You can use the Online Conference area of the MAUG to chat (or type messages) with other Mac owners. To enter the conference area, type **6** or **CO** at the MAUG Function menu. Once in the conference area, you can see which conversation areas, or channels, are currently in use. The channels are listed in parentheses followed by the number of people on each one. Channels 0 through 8 correspond in the conference area to the topic sections of the Message area. An extra conversation area, channel 30, is used for scheduled conferences.

You converse by giving commands and typing comments. To get a list of conference area commands, type **/HELP** and press the Return key (see the figure "Conference Area Commands"). When you give a command, the cursor must be located at the left margin. Commands consist of a slash followed by three or more letters. For example, to join a channel (for a private chat or scheduled conference), type **/TUN** and the number of the channel you wish to enter. Once you've tuned into a channel, anything you type (without a preceding slash) is transmitted to everyone on that channel.

Just as good manners and courtesy help face-to-face conversations progress smoothly, online conferences work best if speakers and listeners follow certain conventions. When a conference begins, the moderator (usually the MAUG system operator) introduces the guest

and explains the topic of discussion. The moderator then asks for five or six questions from the group. Since many people often want to ask questions, you get in line by typing a question mark and pressing the Return key. Do not, however, begin typing your question until the moderator calls on you.

Once you "have the floor," type **OK-Return** to acknowledge that you are still present and want to take the opportunity to ask a question. Then type your question, limiting each line to 50 or 60 characters; otherwise words may drop from other participants' screens or wrap

around in a way that confuses the communication. If your statement runs longer than 50 or 60 characters, type an ellipsis (...) at the end of the line to indicate that your message continues on the next line.

When you finish with your question, type **Done** or **GA** (for Go Ahead). Keep your questions and comments brief (about five to six lines) so that other participants can ask questions. Above all, don't type out of turn. A few people typing at once creates electronic chaos and spoils the conference for everyone.

Prefix commands with a "/"

/TUN #	Tunes channel # (1-36)
/TALK #	Talk privately w/ job#
/MON 1,4	Listen to extra channels
/UNM 7,3	Unmonitor channels
/STA	Type channel status
/TIM	Type time, day, and date
/UST	User status timeout
/UST #	User status for Chn #
/EXI	Exit CB Simulator
/OFF	Exit CB and log off
/WHO	Type PPN of last talker
/HAN	Change handle
/SCR xyz	Scramble on key "xyz"
/SMC xyz	Scr and monitor clear
/XCL xyz	Transmit clear; unscr rcvr
/UNS	Unscramble (both clear)
/SQU abc	Squelch handle "abc"
/SBU #,#	Squelch by user ID
/JOB	Your job #
/PPN	Type PPNs w/messages
/NOPPN	Turn off /PPN
/BAND x	Switch to band "x"
/HELP	Type this message

Conference Area Commands

Use these commands to converse with other Mac owners in the MAUG's conference area. Type the commands in the far left margin. If you type **/PPN**, for example, the CompuServe user ID of each conference participant is shown on screen after the participant's name, or handle.

and view a message, but that would be like playing darts blindfolded. Instead, press Return. The system will begin to display a series of messages beginning with the oldest message on the system (the message with the lowest number) and ending with the latest message.

After each message the Read Options menu appears and offers you three alternatives. The first two options let you reply to the previous message without typing the author's name. The third option returns you to the Function menu. If you want to read the next message in the sequence, press Return.

Subcommand Action

<A>bort	Return to the Function menu
<F>orward	Begin with the specified message, read all messages in order of entry
<I>ndividual	Select specific message for reading
<M>arked	Read messages addressed to you
<N>ew	Read messages you have not read before
<R>everse	Beginning with specified message, read all messages in reverse order of entry
<S>earch	Read messages in a category to be selected

Table 2

The Message subcommands let you control the way you read messages so that you don't have to read every message on the system. You enter the subcommands from the Function menu after typing **R**, for Read. For example, typing **RR** lets you read messages in reverse chronological order.

Narrowing the Search

Reading every message on the bulletin board is a laborious undertaking. Unless you're the kind of person who can't bear to miss the slightest bit of information, you may want to save time by using subcommands to limit your examination of the messages. Subcommands let you focus your search forward or backward, read messages marked for you, or read messages within selected MAUG categories.

At first, the commands listed in the subcommand menu might appear adequate, but you'll soon yearn for more efficient ways to find the messages that most interest you. One way to save time is to use scan commands. These let you discover the subject of messages without reading their entire text. Type **S** at the Function menu, and the bulletin board will show you only message header information—the message number, author, addressee, date, section number, and subject. A more useful command is **SM** (for Scan Marked) which lets you "mark" messages of interest as you scan their headers. Once you finish read-

Reference Library Sections

- 0 SIG Business
- 1 Apple // Hacking
- 2 Apple // Products
- 3 Mac/Lisa Hacking
- 4 Mac/Lisa Products
- 5 Inside Macintosh
- 6 Community Square
- 7 Apple ///
- 8 Telecommunications

Enter selection:

Figure 6

The Reference Library menu stores programs and information by topic, from hardware hints to free software for Apple Computers. Sections 3, 4, and 5 focus on the Mac.

ing and marking the message headers you can return to the Function menu and view the marked messages by typing **RM** (for Read Marked).

The following technique lets you employ the scan commands to save time and money. First, read all the message headers from a section while saving to a file on disk and then log off CompuServe. You can then print the file of message headers and view it at your leisure without spending time on line. The fastest way to get this information off the MAUG is to type **QS** (for Quick Scan) so that all the headers scroll by without pausing for online viewing. If you're using *MacTerminal* be sure to click "Record Lines Off Top" from the Commands menu; this records the screen information on disk (see Figure 7).

Commands

Record Lines Off Top
Clear Lines Off Top...

Reset...

Stop Scrolling
Unlock Keyboard

Figure 7

The Commands menu lets you capture to disk all information that scrolls off the top of the screen. If you've inadvertently captured information that you don't need, clicking *Clear Lines Off Top* erases everything in the Mac's capture buffer.

Reference Library

The MAUG not only offers a message bulletin board but also a computerized library that contains information such as hardware and software reviews, transcripts of online conferences, and a large collection of public-domain software. The Reference Library is divided into the same nine categories as the message and conference areas (see Figure 6). If you'd like a general description of a particular Reference Library section, type **X** and the section's number (0 through 8) from the Function menu. Mac owners usually find sections 0, 3, 4, 5, and 6 most useful. Section 0, SIG Business, includes several help files on how to use the MAUG, as well as an archive of the most interesting messages that have appeared in the MAUG's message area. Section 3 is a "haven for hackers" that contains many utilities and programming aids. Section 4 provides a forum for discussing new hardware and software products, and also an extensive library of public-domain software. Section 5 is intended for members working on commercial software for the Mac and Lisa. A member of Apple's Macintosh development group periodically views messages in section 5 to field questions such as how to become a certified Mac developer. Section 5 also includes programs from the Software Supplement of *Inside Macintosh*, special developer newsletters, and various updates from Apple. Section 6, the Community Square section, contains transcripts of past conferences.

Browsing Through the Library

When you're ready to view a library section, type **XA** and the number of the section you want to look at. After you press the Return key the Database Option menu appears with commands that let you browse through files (BRO), upload files to the system (UPL), exit (EXI), receive help (HEL), or change databases (XA). The browse option (menu item 1) lets you view the library's files with test conditions that limit the scope of your search. After you select the browse option, the prompts **/AGE:** and

/KEY: appear. The age prompt lets you specify, in number of days, how far back you wish to search. The key prompt lets you search for file names that contain certain words, such as "BASIC" or "Fonts." The keywords are specified by the submitters when they upload files to the library. You can obtain a list of all section keywords associated with current messages by typing **KEY** at the Database Option menu. If you want to browse without limiting the search, press the Return key after the key and age prompts and every file in the section will be displayed one by one, beginning with the most recent.

After you enter the browse command and test criteria, the system displays the first file meeting your specifications along

with the following information: file size, date submitted, keywords, description, submitter's ID number, and text.

Sending and Receiving Programs

Once you locate the programs you think might be interesting, you may want them on disk for use on your Mac. You can't use the programs while you're on CompuServe, but you can capture anything in the library to disk free of charge. After each displayed file, a Disposition menu gives you the option of reading the file, downloading it, or returning to the previous option menu. You can capture files to disk with either the Read or Download options in the Disposition menu.



/OFF

*When you want to make a quick exit, the **/OFF** command immediately logs you off the MAUG and CompuServe. This command saves you time and money.*

We've been busy!

Our crew of Mac addicts run new programs as fast as they come in, and we've outlined a few of our favorites to give you a better idea of what there is for the Macintosh (so far), as well as what's coming.

DATABASES

OverVue

PROVUE
The database approved for use in-house at Apple. **OverVue** is written in assembly language, and it's fast (sorts 1000 records in 2 seconds)! Spreadsheet-like display for easy data entry, advanced math capabilities, and data exchange between Microsoft's Multiplan and Chart. Stores 8 report templates, and can handle up to 15 pp on 128K Mac. A sophisticated, powerful new package.

OverVue \$199.88

Filevision

TELOS
A unique database manager. **Filevision** is perfect for unusual data processing/database applications (like storing data associated with objects or events). Not the best choice for traditional DB applications like mail lists.

Filevision \$139.88

PFS:File/PFS Report

Software Publishing
Our choice for the best general-purpose database. **PFS:File** is form oriented, so you see reports formatted on-screen, as they'll print out. Contains the only key-word search feature for text that we've seen. **PFS:Report** adds math functions to the report generator. Calculate statistic functions, averages, and derive additional columns from existing file data. We suggest you get both **File** and **Report** for optimum performance.

PFS:File \$89.88

PFS:Report \$89.88

1st Base \$139.88
DB Master \$139.88
Hababex DB \$139.88
Hababex Adapter \$39.88
Main Street Filer \$139.88
MegaFiler \$139.88
Odesta Helix \$279.88
Omnis 2 (new version w/mouse support) \$199.88

GAMES

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HAYDEN
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Mouse Stampede

MARK OF THE UNICORN
Like Millipede, but with rampaging mice. Fast action and lots of fun, but take it easy on the Mouse in your hand!

Mouse Stampede \$29.88

Millionaire

BLUECHIP
Real men don't play games—they run simulations! A challenging stock market simulation where you buy/sell in response to market info and news events. Much too good to waste on kids.

Millionaire \$44.88

Baron \$44.88
Frogger \$29.88
Forbidden Quest \$34.88
InfoCom Games CALL

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MacSlots \$44.88
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Pansate \$29.88
Run for the Money \$39.88
Transylvania \$29.88
Trivia \$39.88
Tycoon \$44.88
Videx FunPak \$29.88

FINANCIAL/BUSINESS

Sales Edge

HUMAN EDGE
Answer questions about your sales prospects and yourself, then let **Sales Edge** run its report. Its uncannily accurate rundown describes prospects and how you should handle them, including closing techniques, pitfalls, etc. If you can be objective, **Sales Edge** can really help.

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Dollars & Sense \$114.88
Home Accountant \$79.88
Management Edge \$179.88
Multiplan \$139.88
TKI Solver \$179.88
TKI Templates CALL

LANGUAGES

MacForth

CREATIVE SOLUTIONS
We think **MacForth Level II** is the best-buy in any language so far. Full tool-box support, including menus, windows, I/O management. Includes assembler/debugger, floating-point math and extended utilities. A great buy.

MacForth (Level II) \$179.88

Microsoft
BASIC 1.02 \$109.88
BASIC 2.0 CALL
MacForth (Level I) \$104.88
Softworks "C" CALL

WORD PROCESSING

Mac Daisywheel Connection

ASSIMILATION PROCESS
Letter-quality printing is here! **Mac Daisywheel Connection** is transparent to any application using the Imagewriter file. Installs easily on system and supports Apple, Brother/Dynax, NEC and Qume letter-quality printers. Boldface/underlining is supported on printers that offer it. Package includes printer cable.

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MegaMerge \$99.88
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T/Maker Click Art
T/M Personal \$39.88
T/M Publications \$39.88

OTHER

Dow Jones Straight Talk \$59.88
Videx MacCalendar \$64.88

HARDWARE

Microline 92

OKIDATA
Full Imagewriter compatibility, and much better quality in hi-res and draft modes. It's a bit slower than the Imagewriter, but the final output's worth it. **Microline 92's** are rugged, with 160 cps (Shannon Text), 10, 12 and 17 cpi, a correspondence font and full graphics support for the Mac. Cable included.

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The Read option doesn't require an error-checking protocol and is adequate for transferring text files; even if you receive one or two garbled characters during transmission you can still understand the file. If you're using **MacTerminal**, you can receive text files by choosing Record Lines Off Top from the program's Commands menu and then giving the Read command from MAUG's Disposition menu.

The Download option allows you to use an error-checking protocol such as Xmodem, which is important if you want to

Patience and experimentation can give you a growing confidence in your ability to negotiate the various menus and commands.

receive binary programs from MAUG. Programs are often converted to binary code so that the computer can execute the program's instructions quickly, but one lost bit during transmission can make a program inoperable. Capturing programs with the Download option, however, is complicated, and requires an understanding of error-checking and file conversion techniques. A way to read or download programs in text format and then convert them into binary format—so that they can run—is with a program called BINHEX (available in the MAUG's reference library). This data transfer technique, along with other upload and download techniques, will be the subject of an article in a future issue of **Macworld**. In the meantime, other MAUG members can guide you through the data transfer process by answering questions you leave on the message exchange.

THE BOTTOM LINE

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Beyond the Blue Horizon

When you first begin exploring CompuServe, you may feel somewhat disoriented by the MAUG's complexity. After a while, patience and experimentation can give you a growing confidence in your ability to negotiate the various menus and commands, which seem cumbersome in comparison with the Mac's icons and menus. But don't be afraid to exchange messages, explore the reference library, or communicate with other Mac owners. Becoming proficient on the system is the only way to stretch your connect time and get the most out of the benefits the MAUG has to offer. Perhaps the next time you find yourself in foreign computing territory you'll remember that a little roadside assistance is no farther than the MicroNet Apple Users Group. □

Art Wilcox is a San Francisco-based telecommunications consultant and freelance writer.

CompuServe, Inc.
Consumer Information Service
5000 Arlington Center Blvd.
Columbus, OH 43220
800/848-8199

MacTerminal
Apple Computer, Inc.
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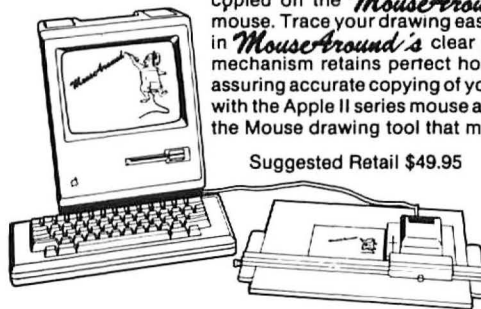


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MouseMat has two important functions. First, it provides a clean smooth rolling surface for your Macintosh mouse. The surface of most desktops is like a magnet for dust and invisible small particles of dirt and grit. Constantly rolling your mouse over this contaminated environment could damage its delicate inner workings. Your mouse will glide effortlessly and safely over the hard rubber surface of the *Mouse*

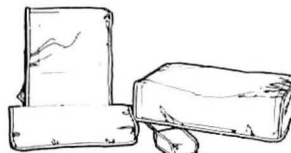


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MacCover is made from 6 gauge anti-static vinyl with machine stitched reinforced seams. The *MacCover* package includes four pieces, one cover each for your Macintosh, keyboard, mouse and Imagewriter printer. *MacCover* affords low cost protection for your valuable computer investment.

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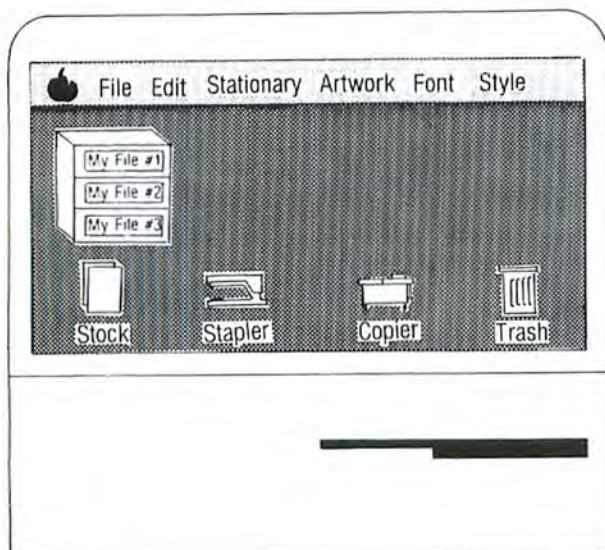
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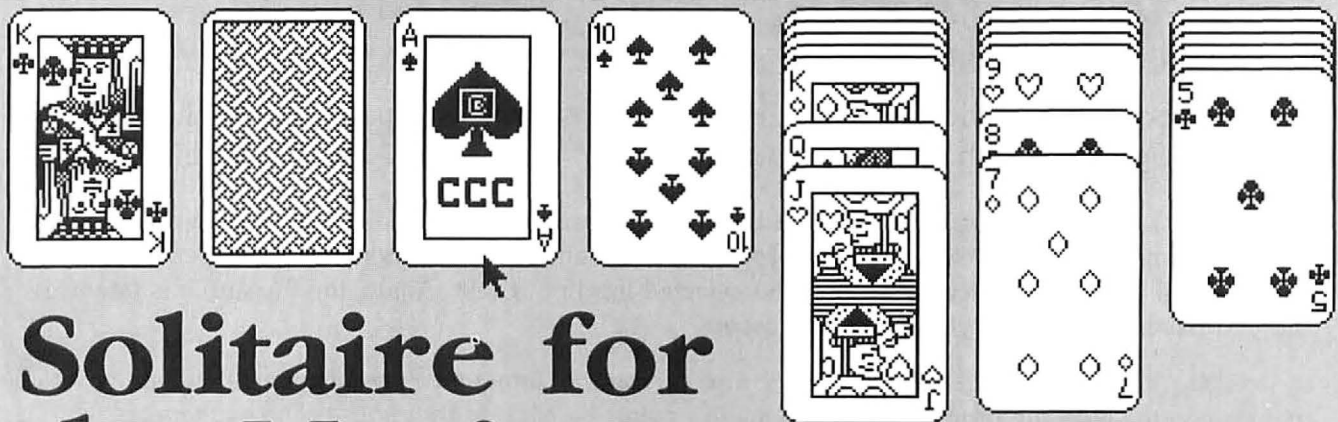
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File Edit Play

Klondike



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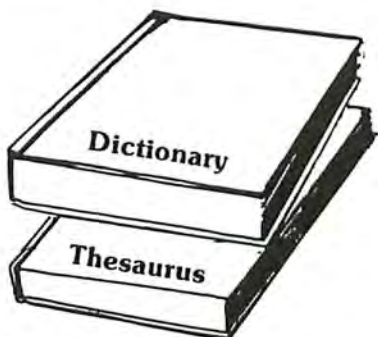
Klondike is the most popular version of solitaire, so you probably already know the rules. Even when you know the rules, though, Klondike is tough to beat.

Completely mouse-controlled, the odds against beating Klondike are 30-1. You might be tempted to cheat when facing those kind of odds, but don't get caught peeking or you'll be penalized!

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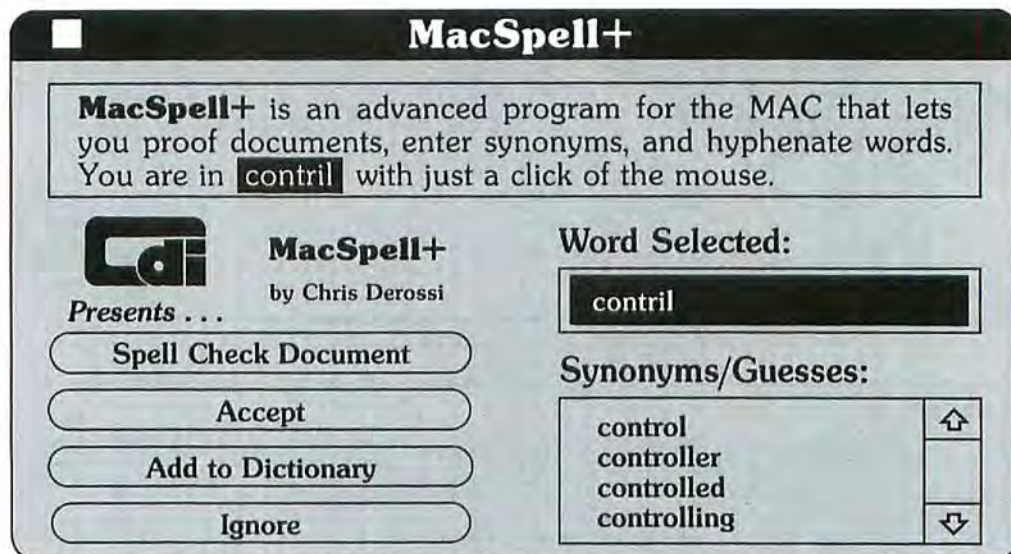
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What makes surges so insidious is that they occur so quickly that the operator is unaware of their occurrence. These surges will continue to degrade the sensitive microcircuitry and the result is lost data and, even worse, computer repairs that are often mistakenly blamed on original equipment failure.

Caused by utility switching, changes in electrical loads and lightning as far away as five miles, surges can also disrupt data transferred within the computer and can wipe out portions of memory.

30,000 Volts At The Tip Of Your Finger

Another common danger to the computer, its peripherals and software, is common static electricity. Like powerline surges, this source of raw power is often put off by the operator as being little more than an annoyance. Few people realize that their bodies are carrying as much as 30,000 volts of electrical power. This power, though not going directly through your system, can pose as great a threat as powerline surges.

The Faulty Ground

In addition to operator safety a properly grounded computer is better able to drain off charges that would otherwise create dangerous voltage levels between the computers chassis and microcircuitry. Again, the operator is typically not aware of whether the outlet is properly grounded and therefore risks both the operator's safety and hardware damage.

RFI Can Play Havoc With Your Image

While RFI (Radio Frequency Interference) is not a source of damage to computer or operator, it can play havoc with the monitor image and to software. Caused by nearby radio stations, the operator's own radio or television, as well as other electrical devices, the RFI shows up on the monitor as a scrambled image. It may also appear as software that has been garbled while in memory. If for no other reason, the computer operator should guard against RFI simply because its effect can nullify the time-saving benefits provided by the computer.

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Open Window

An exchange of Macintosh discoveries

Edited by Daniel Farber

Open Window offers tips to help you use your Macintosh more efficiently. Submitted by readers, industry experts, and the Macworld staff, items in this department address all facets of Mac work, from applications to programming routines to capabilities of the Mac and software not covered in the documentation.

This month's Open Window features a variety of items. One person has a method for reviving a disk damaged by fingerprints on the magnetic surface. Another contributor offers a way to put more than one Note Pad on a disk, and someone else tells how to bypass the Finder and gain 46K of disk space. A simplified method of cutting and pasting text using the Backspace and ⌘ keys is revealed, as well as the special tool that lets you get inside the Mac. MacPaint items are plentiful this month, including tips on making rulers for creating and lining up drawings, creating "ultra-bold" characters, producing simple animations, and conserving space on MacPaint disks by consolidating drawings.

We've been receiving quite a few submissions on disk. Sending disks helps make our job easier, since we won't have to retype your contributions if we use them. Please include a paper copy of your submission, with screen shots that illustrate your Macintosh tip, if applicable. Your disks will be returned as soon as possible. Sometimes it takes us a few weeks to get to your submissions, so be patient.

Swab the Disk

Recently I purchased *MacEdge*, an excellent math and reading program, for my 6- and 7-year-old children. After they finished playing one afternoon, they left the disk on top of the desk instead of in the drawer. My lightning-fast 2-year-old daughter decided to inspect this new toy. The next time I tried to use *MacEdge*, the disk began to spin, then the screen went black and a little Mac icon with an error code appeared on the screen.

I tried several techniques I've read about to start up my disk, without success. I decided to open the disk's sliding door and look at the disk surface. Behold, there were two little fingerprints on the top and bottom sides of the magnetic disk. I thought, "There goes \$40 for two days of fun." As a last-ditch effort I tried using a cotton swab with some alcohol on it to

remove the prints. I found that gently twirling the swab picked up any loose cotton fibers. Blowing lightly on the disk surface dried the alcohol quickly. After both fingerprints were removed I tried the disk, and it worked. I do not know if this procedure is recommended, but in this case it saved my disk.

*Alan Miller
Scottsville, New York*

Multiple Note Pads

If you find (as I do) that eight pages just aren't enough for a desk accessory as useful as the Note Pad, I have discovered a simple solution. When eight pages are filled up, rename the Note Pad File in the System Folder something like Note 1. The next time you choose Note Pad from the Apple menu, the Mac will create a new Note Pad File on your disk, which you can fill with another eight pages of information. If you need to look at something in the original Note Pad, just rename its icon Note Pad File and change the second file to Note 1. You can keep adding storage files for notes using this method until the disk is full.

*Chris Cowell
Portland, Oregon*

Exit the Finder

There is a way to squeeze another 46K of space out of a Macintosh disk, but you'll have to sacrifice the Finder on your application disk. This technique works best if you use one application during a work session. To remove the Finder, use the following procedure.

- Start up a disk that contains the System and Finder files.
- Eject the startup disk and insert an application disk such as *MacWrite* or *MacPaint*.
- Select the application program and choose Set Startup from the Special menu.
- Remove the Finder from your application disk by dragging the Finder icon into the Trash. (The Finder on the startup disk is in control of the Mac, so the Finder on your application disk is not "in use," and can be removed.)
- Eject the application disk and reboot the Mac.

Now, when you start up your application disk, the program will automatically bypass the Finder and open the application. On a single-drive Mac, the extra 46K will help cut down on disk juggling, allowing you to store more documents on the application disk. Because the Finder is not on the disk, you cannot use the Quit command to leave the application. Instead, when you finish work-

Open Window

ing, choose Close from the File menu and save your document as usual. Then use the ⌘ -Shift-1 key combination to eject the disk. Remember that you won't be able to cut and paste between applications; any information stored in the Clipboard will be lost because you must restart the Mac if you change applications.

John Damian

Lynnfield, Massachusetts

Paint Savings

For no special reason, I decided to combine two *MacPaint* documents into one and compare the total disk space (each drawing took up less than one screen). The separate documents used a total of 8704 bytes. The combined drawing weighed in at 6656 bytes, precisely 2048 bytes lighter. The explanation for this discrepancy is that each *MacPaint* document requires 2K (2048 bytes) of overhead in addition to the drawing itself. (Try saving a blank drawing; the document will take up 2K.) If you're like me, and have a lot of small pictures you're saving for sentimental reasons, you can consolidate documents to save disk space. You can always split them apart later when you need them.

Michael Schwartz

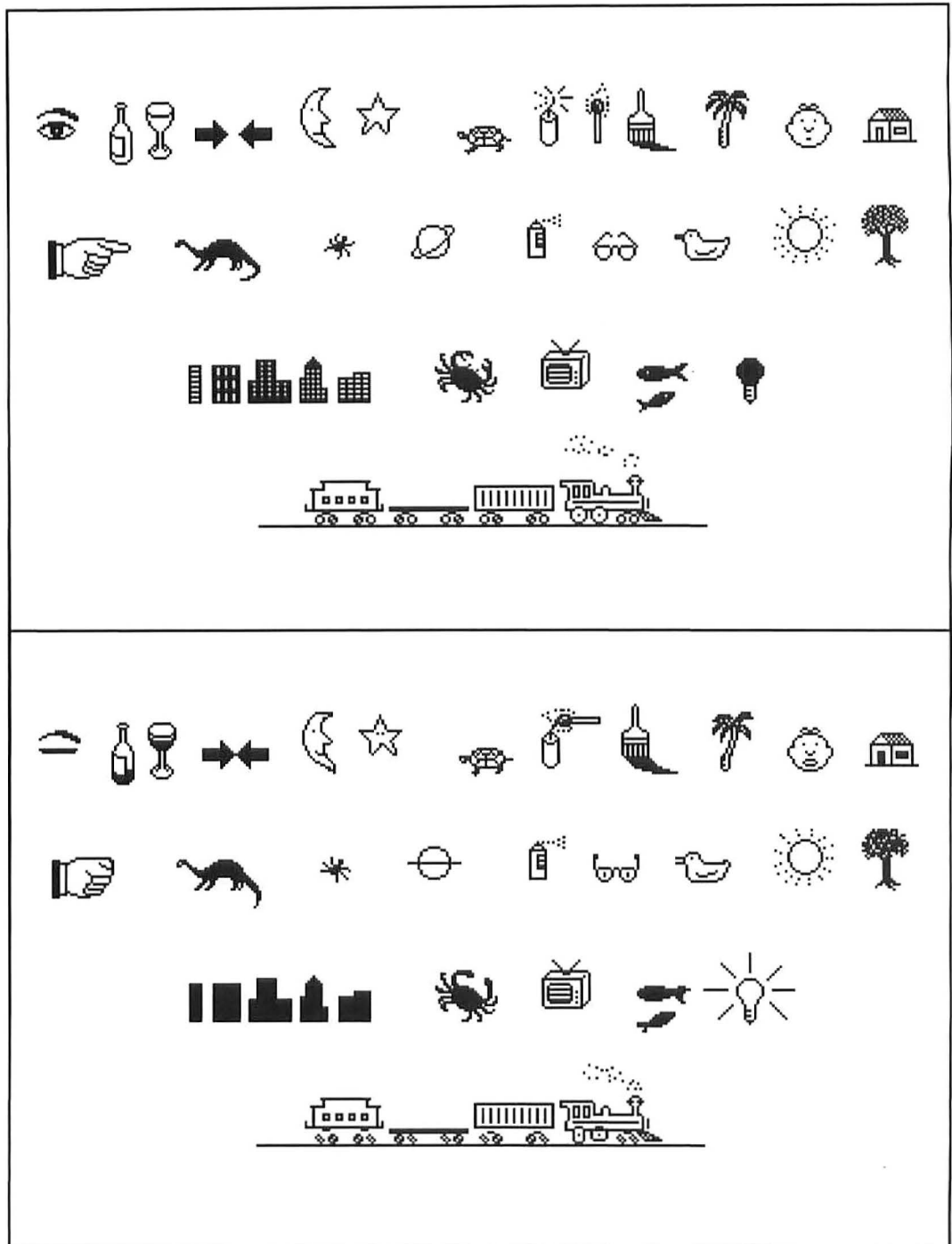
Sunnyvale, California

Getting Inside the Mac

For the truly curious, a screwdriver with a Torx T-15 tip may be used to loosen the four screws that hold the Mac's case together. The shaft of the screwdriver should be at least six inches long to reach the two recessed screws near the handle.

Steve Jasik

Menlo Park, California



Animated Cairo

You can make Cairo characters "move" by using the Undo command in MacPaint. After you copy a slightly modified version of a drawing to the Clipboard, paste it over the original image and then undo the Paste command; the picture will appear to move.

Apple made the insides of the Mac somewhat inaccessible to prevent people from ruining their Macs or getting jolted by a lethal dose of Macintosh voltage, so make sure you know what you are doing if you tamper with the Mac's analog or digital circuitry.
—Ed.

MacPaint Animation

You can create a simple form of animation using *MacPaint*'s Undo feature. By drawing two slightly different pictures in the same *MacPaint* document, pasting one picture over the other, and pressing the tilde/accent (Undo) key or the ⌘-Z key combination, you can make the picture appear to move (see the figure "Animated Cairo"). To animate a *MacPaint* drawing, use the following technique:

- Open *MacPaint*.
- Draw your first picture.
- Put a rectangle around the edge of the active window (for registration).
- Copy the entire picture by double-clicking on the marquee and selecting Copy from the Edit menu.
- Use the grabber and the Shift key to move the picture up so only the bottom line is showing at the top of the active window.
- Select Paste from the Edit menu.
- Make slight changes in the picture.
- Select Save from the File menu.
- Set the Rate of Repeating Keys on the Control Panel to 1.
- Select the Paste command again.

Plain Geneva
Bold Geneva
Geneva Outline
Geneva Outline
Geneva Outline
Outline Italics
Outline Italics

Ultrabold letters filled in using the paint bucket

Ultrabold letters touched up with the pencil in FatBits

Ultrabold italic letters filled in with the pencil in FatBits

Ultrabold Geneva

Filling in outlined characters with the black pattern using the paint bucket or the pencil in FatBits gives you "ultrabold" characters, which are useful for creating heavier display type.

- Select one of the tools, such as the pencil or the paintbrush (this clears the dotted line of the marquee).
 - Press the Undo key (either the tilde/accent key or ⌘-Z).
- This type of animation is obviously very limited, but this technique gives you an easy way to create some amusing effects. If drawing is not your forte, you can use pictures from the Cairo font or the Scrapbook as a starting point for your animation.

*Chris Smith
Oakland, California*

Ultrabold Characters

As a graphic designer, I've been using *MacPaint* to create sketches for ads, brochures, and other projects. I found that the bold fonts are often not bold enough for my purposes. Many commercial typefaces come in an "ultrabold" or

"heavy bold" weight as well as regular bold. To simulate ultrabold weight, I use the outline version of the font and fill it with the black pattern from the paint bucket (see the figure "Ultrabold Geneva"). This technique works for most of the larger fonts, but usually requires some touch-up work in FatBits, particularly in the notches of lowercase versions of *a*, *n*, and *u*, and between the dot and stem of the lowercase *i*. You can also create ultrabold italic characters, but you must do the filling in FatBits because there is not enough space in the characters to use the paint bucket effectively.

*Richard Bloch
Boston, Massachusetts*

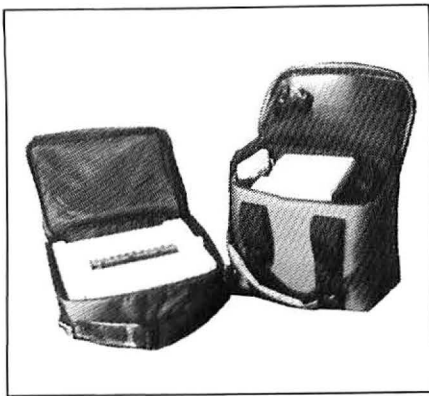
Ready-Made Ruler

Here's a simple solution for *MacPaint* users who need a ruler to help create drawings or line up parts of a drawing. In fact, this solution is so simple, you don't even have to draw a ruler. To start, open a *MacWrite*

document. Once the document window appears, simultaneously press the ⌘-Shift-3 key combination. This produces a "snapshot" of the current screen, including the formatting ruler at the top. Now quit *MacWrite*, and you will see a *MacPaint* document called Screen0. If you do not have *MacPaint* on the disk that holds your "snapshot," transfer Screen0 to a *MacPaint* disk so you can edit the document. Otherwise, just open the document labeled Screen0. Next, erase everything except the *MacWrite* ruler (use the marquee to select large portions of the drawing and press the Backspace key to delete them).

You may duplicate the ruler, rotate it, or alter it using any of *MacPaint*'s tools. You may want to change the numbering on the ruler so the measure starts

Open Window



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with 0 rather than 1. If you use rulers frequently, you might want to save the ruler to the Scrapbook for later use (see the figure "Scrap Ruler"). You need to save only an inch or so, as you may duplicate the section using the lasso or the marquee and the Option key, and connect the parts to form a longer ruler. (Note that an inch on the *MacWrite* ruler is actually slightly larger than one inch when displayed, although the ruler is accurate when printed out.)

Nate McVaugh
Salt Lake City, Utah

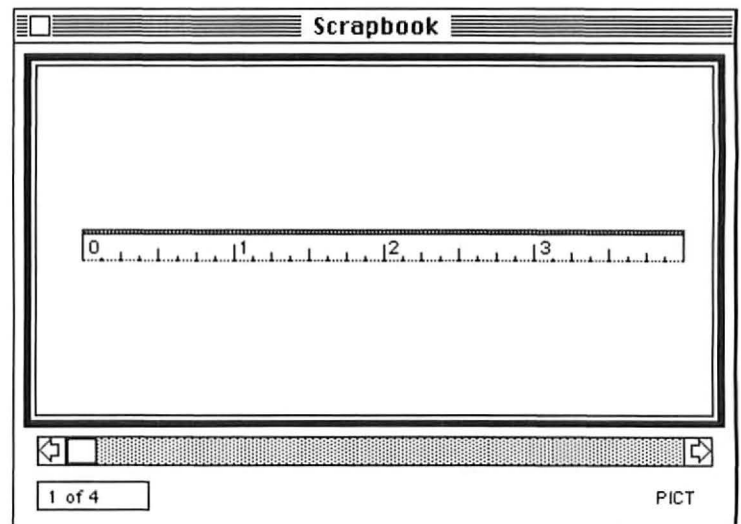
Pixel Ruler

While working with *MacPaint*, I have found it necessary to count pixels in order to divide diagrams into equal parts. This task can be very tedious and tiring. I now have a way around

counting each and every pixel. I constructed a pixel ruler. To construct your own ruler, draw 20 pixels in *FatBits*, marking off every 10 pixels. Next, encircle the section of pixels with the lasso and copy it to the Clipboard. With the grabber, move the original section over so there is room to paste in a copy, leaving an edge showing so the two parts can be connected. Continue this procedure in *FatBits* until you have a 250-pixel ruler (see the figure "Pixel Ruler"). After exiting *FatBits*, mark off every 50 pixels with numerals for easier measuring.

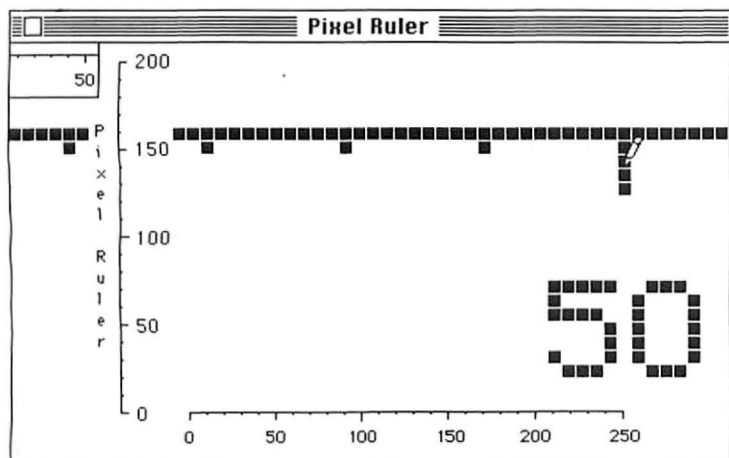
To construct the vertical pixel ruler, I simply rotated the horizontal version and marked it off vertically. I made the vertical ruler 200 pixels long. I choose these lengths because they are big enough to be useful, yet small enough to be easily positioned within the *MacPaint* screen.

Finally, I pasted the two rulers into the Scrapbook for quick access. One hint: if you need to measure something that does not land on a 10-pixel



Scrap Ruler

Taking a snapshot (⌘-Shift-3) of the ruler at the top of a *MacWrite* screen creates a *MacPaint* document. You can customize the ruler in *MacPaint* and store it in the Scrapbook. Note that the *MacWrite* ruler, which begins at 1 inch, has been changed so that it begins at 0.



Pixel Ruler

A pixel-oriented ruler provides a precise way to work on MacPaint drawings. You can store the ruler in the Scrapbook and bring it out whenever you need to make detailed measurements.

mark, go into FatBits at that spot and count the remaining few pixels. I hope you find these rulers as useful as I have.

David Eilers

Saint Paul, Minnesota

subscripts are not returned as such (they revert to plain text), and it will not work when backspacing over highlighted words (doing so deletes the text).

John Manwaring

Logan, Utah

Backspace Command

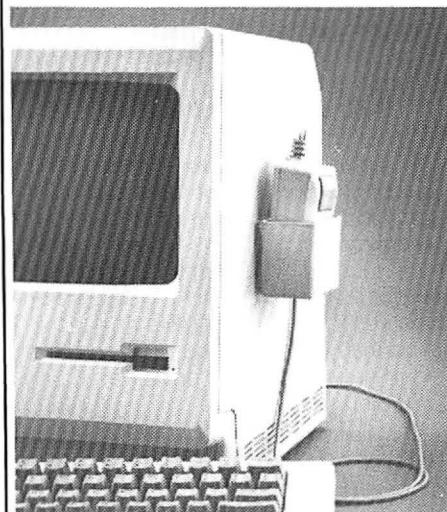
I would like to share a discovery of mine concerning another use for the \mathbb{B} key. I have found that this technique simplifies the process of cutting and pasting in MacWrite, since the word or phrase to be cut does not require highlighting, nor does it need to be cut or pasted in the usual way. When you need to move a word or phrase, move the insertion point to the end of that word or phrase, and backspace over it until it is removed from the text. Next, move the insertion point to where you want the word or phrase pasted. Finally, press both the \mathbb{B} key and the Backspace key; the word or phrase reappears at that point. This technique works with every font and style of type, but does have limitations: the maximum length of the phrase to be moved is 49 characters (including spaces), it only works in MacWrite, superscripts and

Perhaps you've come up with a nifty routine, gained some insight into how the Mac or an application program works, or even written a short program that performs a useful function or creates an interesting diversion. Tell us about it, and we'll pass your discovery along. We'll also pay \$25 to \$100 for each Open Window item published. Please send your Macintosh discovery on disk (which we will return) to Macworld, Open Window, 555 De Haro St., San Francisco, CA 94107, or electronically to CompuServe 74055,412 or The Source STE908. □

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You want to know a secret?

Sure. Everyone likes to know secrets. Well, our secret is that it's October. That's right. There you are, looking at the January issue of **Macworld** (that arrived in December), and we're telling you it's October. Just goes to show you can't even trust the calendar any more.

You see, this product list contains every item we had in stock on a beautiful autumn day in late October. Because that's when our deadline was for getting this list into the January issue of **Macworld**.

Our policy, remember, is that we never advertise anything for the Macintosh until we have it on the shelves. Too many products are promised and then never delivered, or delivered only after long delays.

BUT just because you don't see what you want on this list doesn't mean we don't have it now (whenever that is). Because by now, i.e. December or January, we will have received more new products that we won't be able to advertise until the March issue (which you'll receive in February). And, through the wonders of telecommunications, i.e. the telephone, we could talk with you about those products today. Whenever that happens to be.

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Baby's first Christmas.

As the Macintosh and MacConnection end their first calendar year, we would like to thank you for your interest, support, orders, and sense of humor.

Happy Holidays from all of us at MacConnection.

SOFTWARE

ATI

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Ann Arbor Softworks

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Animation Toolkit 1 advanced version (*All the features above plus sound.*) 54.

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Axlon

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Creative Solutions

MacForth (Level 1) *Learn to program your Mac in "Forth". Define your own menus & windows.* 99.

MacForth (Level 2) *Now you can get serious. Level 2 includes an assembler, floating point, and advanced graphics.* 139.

Desktop Software

1st Base (*File management and report writing program for use with MacWrite & MacPaint.*)... \$109.

Dow Jones

Straight Talk (*Communications package for accessing on-line databases and other Macs and micros.*) 54.

1st Byte

Smooth Talker (*Voice synthesis software for the Mac.*) 119.

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The Management Edge (*Identify and evaluate management skills and discover methods for improvement.*) 129.

The Negotiation Edge (*Develop "How To" plan by analyzing critical factors*) 179.

Mind Prober (*Software that reveals people's hidden thoughts.*) 31.

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MacHebrew (*12 + 24 point Hebrew font. Text reads left to right*) 89.

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Do you use your mouse as a hood ornament?

Are you scheduled to take the first Mac into space? Do you panhandle to raise money for software? Have you ever felt that your Mac was out to get you? And, of course, did you meet the woman/man/etc. of your dreams through your Mac? (Or, have you ever been caught fooling around with someone else's Mac?)

Get the idea? Send MacConnection your strange-but-true Mac story, along with any relevant snapshots, Mac drawings, and/or newspaper clippings. Be sure to enclose your name, address and telephone number. Don't forget to keep a copy for yourself—everything you send us becomes the property of MacConnection.

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 MacCheckers/Reversi 29.
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HARDWARE

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Compucable

Mac to Hayes Smartmodem Cable (9 ft length) 19.

Creighton Development

ProPrint (Software for connecting Mac to daisy wheel printer.) 49.
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Compucable's Mac to Smartmodem cable 19.

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BASF

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MAXELL

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Memorex

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Verbatim

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Microsoft

Apple-Mac Book (The much-acclaimed Mac reference book. An instant classic.) 14.

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Optimum

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28.

Megahaus

Megafile (Instant access to all your data. Print reports in a variety of formats.)

139.

Megamerge (A mailmerge for Macwrite — generates form letters and mailing labels.)

86.

Microsoft

Basic (The standard micro language — now available for the Mac.)

99.

Chart (Business graphics program transforms numerical data into over 40 different graph styles.)

89.

Multiplan (One of the most tried, proven, and popular electronic spreadsheets.)

125.

Miles Computing

Mac the Knife (Nearly 500 illustrations — borders, icons, maps, etc. Use with MacPaint.)

27.

Monogram

Dollars & Sense (Personal financial management program for your Mac.)

84.

Organization Software

Omnis 2 (Information management system with global update/delete, user-defined records, mail merge, etc.)

145.

Omnis 3 (Database management compatible with Omnis 2. Supports up to 12 open files.)

219.

Palantir

Mactype (Typing instruction, supports both Qwerty and Dvorak keyboards)

31.

ProVUE Development

OverVUE (Database program with powerful math capabilities. Can sort 1000 records in 2 seconds)

185.

RealData, Inc.

Real estate and financial analysis templates. You must have Multiplan to use.

#1 Income producing real estate

75.

#2 General financial analysis

75.

#3 Commercial real estate development

75.

#4 Residential real estate

75.

Reston Publishing

Construction Estimator (Calculates construction costs. You must have Multiplan to use.)

49.

MacConnection Software Special

through January 31, 1985

Telos Software

Filevision

Store visual data along with relevant numbers and text. This unique graphic filing program lets you create a database out of whatever your mind can envision.

- Visual filing system
- Plan, price and design a home
- Create technical illustrations
- Map sales areas and track volume
- Custom design mailing labels

\$99

Rio Grande Software

Softmaker II (Write your own Mac software. Well-documented, database program generator for both professionals and amateurs.)

\$119.

Software Publishing

PFS:File (Powerful system for updating, recording, retrieving, and printing data.)

79.

PFS:Report (Transfers PFS:File data into reports, according to your specifications.)

79.

PFS:File & Report (Buy both and save.)

125.

Softworks Limited

Softworks C (Turn your Mac into a C language development system.)

279.

Stoneware

DB Master (Complete database management featuring on-screen prompts, browse capability, built-in report generator and more.)

129.

T/Maker

Click Art Personal Graphics (100+ drawings: cartoons, symbols, borders, famous people.)

35.

Click Art Publications (Graphics for newsletters, reports, invitations and more.)

35.

Telos

Filevision

see special

Think Educational

Mind Over Mac (Five challenging games to develop mathematical & memory skills.)

36.

Mac Edge (Learning programs in math and reading using graphics and games.)

36.

GAMES

Blue Chip

Millionaire (Realistic stock market play. Start investing with \$10,000. Difficulty increases with success.)

37.

CBS

Murder by the Dozen. (12 intricate mysteries. Work alone or in teams against rival detectives or the relentless clock.)

29.

Datapak Software

Turn your Mac into a casino!

Mac-Jack (Electronic black jack.)

27.

Mac-Poker (Electronic poker. Habit-forming when the chips are down.)

27.

Hayden

Sargon III (The ultimate in computer chess. 9 levels of play.)

35.

Industrial Components

Mac Puzzle (Create your own jigsaw puzzles out of MacPaint drawings.)

27.

Infocom

You're a magician challenging the dungeon master, a detective solving a murder mystery, a scientist deciphering hieroglyphics, or just an ordinary mortal meeting the Wizard of Frobozz. Difficulty levels shown in italics.

Seastalker (junior)

27.

Zork I (standard)

27.

Enchanter (standard)

27.

the Witness (standard)

27.

Planetfall (standard)

27.

Cutthroats (standard)

27.

Zork II (advanced)

35.

Zork III (advanced)

35.

Infidel (advanced)

35.

Sorcerer (advanced)

35.

Deadline (expert)

39.

Starcross (expert)

39.

Suspended (expert)

39.

Invisicubes (hint booklets) are available for all

Infocom games. Specify game

7.

Mark of the Unicorn

Mouse Stampede (Blow up the mice and watch them turn into cheese. Addictive.)

23.

Mirage

Trivia (Over 5000 questions, 5 categories, 3 difficulty levels. Find out what you know, thought you knew or never knew you didn't know. You know?)

29.

1-800/Mac&Lisa

430C

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A Night at the User Group

Jeffrey S. Young

I wouldn't want to belong to any club that would accept me as a member. — Groucho Marx

Groucho would have been a Macintosh owner. No doubt about that. Can you see him punching collections of arcane commands to take a look at his latest scripts and jokes? Of course not. Any guy who had a little bird with a mystery word in its beak drop out of the sky on national television in the staid fifties would have taken to the mouse like a duck to soup. But would Groucho have joined a Mac user group? Now that's a much tougher question.

Admit it, part of the reason you bought a Macintosh was that you were bucking the trend toward the traditional, prim green phosphor screen of the IBM PC and its compatibles. There were all those serious, dull computers in the stores... and then there was the Mac, which didn't act like any of them. If you had been content to sit patiently in the middle of the road, you would have bought one of those other personal computers. Even if their software was kind of boring and difficult to use, at least there was lots of it. But no, you didn't listen to all the voices of reason; you let your heart rule your head and bought a Macintosh.

When you started to use your new machine, you found that the computer store couldn't (or wouldn't) answer all your questions. So you read everything about the Mac you could get your hands on, but lusted for still more information. And while you loved showing off the machine to your friends and family, you began to long for contact with other Macintosh owners. Now you've finally put aside your fear of joining clubs and decided to investigate Mac user groups.

The Big Store

There are basically three types of user groups. The most common type is regional; it's usually named after a city or geographic area and brings together the Mac users (and potential Mac users) who live there. Another type of group is organizational. A typical organizational group is formed in a college or university and reflects the interests of the school's students, staff,

and faculty. And finally there is the national, or "super," type of group, which attempts to create a nationwide constituency by replacing monthly (or weekly) local meetings with electronic bulletin boards and message services.

If there is a large pool of Mac owners in your neck of the woods, you may be able to choose from several groups with very different personalities and approaches to "group user interface." If there isn't, you might have to rely on one of the less personal national groups. In any case, you should shop around and take a look at as many groups as you can before committing your hard-won dollars (the usual yearly membership fee is around \$40).

Most Macintosh user groups have basically the same goal—to provide a source of information and a place to meet other Mac owners, along with a newsletter and some public-domain software. But the personality of each group varies greatly with the interests and attitudes of the founders. Not to mention said founders' skill at running an organization, savvy for collaring interesting speakers, and flair for producing an informative newsletter.

Show Page

It was pitch-dark outside when the San Francisco Macintosh user group, called Show Page, gathered for a "first Wednesday of the month" meeting. (User groups usually meet at the same time of each month, presumably to provide an oasis of regularity in their members' lives.) As the 7:30 p.m. starting time approached, two fellows at a folding card table near the door were doing a land-office business selling single admissions at \$3 a head, while a colleague nearby was swamped by members who had neglected to bring their membership cards. Other than a few Macs under people's arms, the scene could have been from a Rockwell painting of bingo night at the local church... well, maybe.





Show Page, a Macintosh user group in San Francisco, gathers for its monthly meeting. After a few presentations, including spiels by marketing representatives of software companies, members broke up into small groups to discuss a variety of special subjects.





The Show Page meeting included a presentation on hard disk drives by Michael Miller of Popular Computing magazine.

Beyond the entrance table was a room filled with a couple hundred people sitting on rows of folding chairs. Most of them were in their mid-thirties, but some were kids or senior citizens. About three-fourths of the audience was male. However, some user group veterans said that Show Page, like other Mac user groups, has more female members than groups devoted to other personal computers.

Very few of the members were talking to each other: most of them seemed to have come by themselves. However, before the meeting commenced, a few clusters of people were gathered around some vendors' displays (an important part of a good user group meeting) to examine the discounted software, disks, hardware accessories, and various odds and ends for sale.

After a while the lights went down, a few lights were focused on a makeshift stage at the front of the room, and the group's president, Betsy Radford, welcomed the crowd and introduced the first speaker. The speaker was a marketing representative for a company that had recently released a piece of Mac software. With a jocular manner, he launched into his spiel. Un-

fortunately his visual presentation was limited to slides of his product's screens because the Show Page group could not yet afford to buy a large-screen, or projection, Macintosh. This visual hamstringing, combined with the speaker's long-winded and somewhat heavy-handed sales talk, sent an exodus of members to the parking lot, the lobby, and an unoccupied room just off the assembly hall. Evidently some Macintosh owners weren't willing to sit through a boring presentation.

● ● ● ● ● *After you attend the meetings of several user groups, you realize that they all offer the same public-domain programs.*

"I think it's fine for this guy to talk about his product," one wild-haired fellow in Birkenstocks angrily explained to Betsy Radford after the presentation. He had cornered her in the lobby, and she kept trying to quiet him without much success. "But I think you should limit each of these presentations to just 15 minutes. The best part of this meeting is the networking, meeting the other people—not listening to a sales pitch for a marginal product."

You never know who you'll meet at a user group meeting. The wild-haired fellow turned out to be Arthur Naiman, an intriguing character and no computer amateur. He's the author of a best-seller on word processing and is currently putting the finishing touches on a book about the Macintosh. Moments after his conversation with Radford, he stopped a passing woman and introduced her as Patty Phelan, a San Francisco associate of East Coast software agent John Brockman.

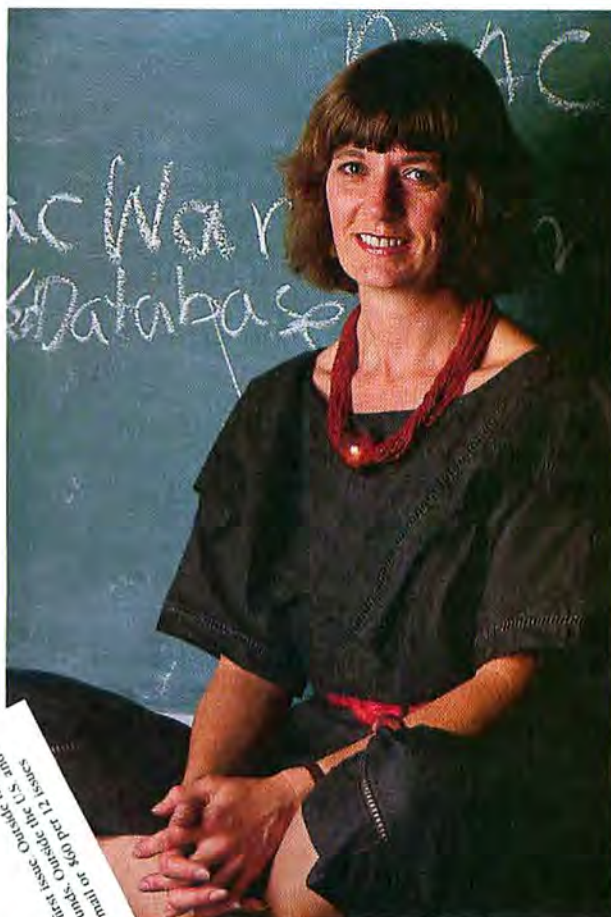
Back in the main hall, a second speaker began to present a package of real estate and financial planning programs. Since the crowd was already restless, he saw the handwriting on the wall and cut his speech short. Meanwhile, at the back of the hall, a program was being copied by a coterie of folks encircling a Mac and an external drive (user-supported software differs from public-domain software in that the producer offers it for free but asks for a "donation"). On the other side of the hall, Show Page's "public-domain software librarian," Stan Guidero, warily eyed the oblivious copiers. The low hum of spinning Sony disks, punctuated by the beeps coming out of Macintosh speakers, carried across the crowd as Guidero set up his table to sell disks after the presentations were over.

Which is a good thing, because most of the programs have been either "downloaded" from CompuServe's Reference Library (see "Backstreets of the MAUG" in this issue) or donated to user groups and Mac users everywhere by Bill Atkinson (creator of *MacPaint*) or one of Apple's other programmers. And after you attend the meetings of several user groups, you realize that they all offer the same public-domain programs. The assortment usually includes a couple of communications programs for the Mac, some Microsoft BASIC (MBASIC) games and graphics routines, some *MacPaint* imagery, and often some potentially useful but arcane MBASIC programs.

Then, an amazing character surfaced. Jonathon Draper, formerly Crunch, the original creator to subvert the telephone in the early seven people at the program.

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And the answer was, "No," said Stone, a Mill Valley contractor sitting next to Sandy and "I didn't cheat," explained Larry. "I just spotted the spot he did and were still a manufacturer and they to



Betsy Radford, the president of Show Page, a San Francisco Mac user group.



At the Show Page meeting, Sandy Jensen came away with the command in the game Transylvania that will get him into the wagon.

7 didn't care where the answer came
I enthusiastically, tugging on his fa-
Come on Dad, let's go home. Oh boy, I
my brother and sister the answer."
it as close to true networking as

low Page gathering, Berkeley (MUG), affiliated with the Berkeley, held its first meeting in a banked lecture hall with chairs that were etched only an hour before, the glass in mechanical engineering were covered with hi-

[illegible]

As the audience started trickling in, it was noticeable that, not surprisingly, the 60-odd members were younger and more casually dressed than the Show Page crowd. But here also women accounted for about a quarter of the group, and nobody talked to anybody else before the meeting.

Despite the initial quiet, the meeting quickly built up steam. Reese Jones, who had organized the group, described some of the founders' plans: to provide a newsletter on disk and a bulletin board on the university's campuswide UNIX system, to cooperate closely with other university user groups, and to charge a \$15 annual membership fee. Then another organizer ran through a comprehensive list of the software released to date for the Mac. He openly criticized some of the programs he had used, claiming that they contained bugs, had non-Macintosh interfaces, and were difficult to use.

While the San Francisco group was more formal, and much larger, which limited opportunities for group-wide discussion, the bulk of the Berkeley meeting was taken up (after a demonstration of the FORTH programming language's musical capabilities) by a freewheeling discussion. Questions were thrown out to the audience, and answers were invited from every-

The first meeting of the Berkeley Macintosh Users Group (BMUG) was devoted mostly to a freewheeling discussion on topics ranging from MacFORTH's music capabilities to the cost of upgrading to 512K.



one. Conversations ranged from debates about the speed of beta-test versions of *Microsoft Word* ("too slow" was the consensus opinion), to the cost of upgrading to a 512K Mac, to what kind of letter quality printer to buy.

● ● ● ● ● *He held up the cable in his left hand like a captured garden snake.*

And it was this last question, which led to a discussion of "serial interfaces," that produced the kind of insider's tip you join a user group to hear. From a briefcase on the podium, Reese Jones pulled a skinny little black cable with a bunch of colored wires exposed at one end and soldered and attached to a computer pin. But this wasn't the 9-pin connector on the back of the Macintosh. It was a 25-pin connector, which is known as a DB-25. With a showman's sense of timing, he pulled a sheet of paper out of his pocket and without another word went to the chalkboard and wrote a list of wire-to-pin connections while the conversation kept going in the audience. When he was finished, he turned back to the crowd.

"This is a \$3.99 cable sold at Radio Shack and called a 'Joystick Extension Cable' for Atari games," he explained. He held up the cable in his left hand like a captured garden snake. "And on the board is the wiring diagram you need to change this cable so you can link your Mac to any modem or printer with a standard DB-25 serial connector. Usually this kind of cable costs \$40.

"All you need is a soldering gun and the non-Mac pin. Both ends of the cable already come with the right connector for the Macintosh end of things. But be cool when you go into the store to buy it, all right? As soon as Radio Shack gets wind of this they'll triple the price."

The National Clubs

Now, if selecting a local Mac user group isn't enough to worry about, there is a further choice you can make. There are several national, or "super," groups you can join. The oldest super group is the Boston Computing Society (BCS), which is the first user group founded. Its membership (for all types of computers) is 12,000 strong. If you live in the Boston area, you can go to the monthly meetings of the Macintosh section. Even if you don't, the BCS offers some discount programs, a monthly magazine, and a Time-Net arrangement that allows access to the system from almost every part of the country. BCS also recently contracted with Western Union to provide an electronic mailbox for each member.

User Group Directory

This is a list of user groups and publications. The information included in this listing may have changed since we received it. For the most up-to-date information on user groups in your area contact International Apple Core, 908 George St., Santa Clara, CA 95050, 408/727-7652.

A.P.P.L.E.
21246 68th Ave. S
Kent, WA 98032
206/872-2245

Association of Apple 32 Users
(Lisa & Macintosh)
P.O. Box 634
Santa Clara, CA 95052

Show Page Macintosh Users
Group
2040 Polk St. #340
San Francisco, CA 94109
415/441-8648

Boston Computer Society
Macintosh Users Group
1 Center Plaza
Boston, MA 02108
617/367-8080, 617/354-7899

Conejo Valley Macintosh Users
Group
3637 Thousand Oaks Blvd.
Westlake Village, CA 91362
805/496-8090

Capitol Macintosh
Users Group
9431 Georgia Ave.
Silver Springs, MD 20910
301/585-4262

Carolina Apple Core
P.O. Box 31424
Raleigh, NC 27603

Club Mac
735 Walnut
Boulder, CO 80302
303/449-5533

Club Mac
6904 Hopkins Rd.
Des Moines, IA 50322
515/276-2345

Drexel University Macintosh
Users Group
21 Saddle Ln.
Cherry Hill, NJ 08002
609/667-3131

Israeli Macintosh Users Club
13 Nehardeaa St.
Tel-Aviv, Israel 64235

Kirksville Macintosh User
Group
100 W. LaHarpe
Kirksville, MO 63501

Los Angeles Macintosh Users
Group
12021 Wilshire Blvd. #405
Los Angeles, CA 90025
213/392-5697

Macintosh International
Apple Corps
908 George St.
Santa Clara, CA 95050
408/727-7652

Macintosh User Group
ICOR 200 W. Washington
Fairfield, IA 52556

Macintosh Users Group
Rt. 1 Box 540-19AB
Conover, NC 28613
704/256-7035

Mesa Mac Group
Mesa Computer Mart
1153 E. Main St.
Mesa, AZ 85203

National Apple Pi
Wayland Square
P.O. Box 2198
Providence, RI 02906

New York Macintosh Users
Group
P.O. Box 6686 Yorkville
Station
New York, NY 10128
212/535-1943

North Florida Macintosh
Users Group
P.O. Box 10286
Jacksonville, FL 32247
904/396-6953

San Diego Macintosh Users
Group
P.O. Box 12561
La Jolla, CA 92037
619/566-3939

The Macintosh Users Group
1077 Vallejo St.
San Francisco, CA 94133
415/432-9713

Victoria Macintosh User's
Group
c/o Apples Victoria
P.O. Box 5338-B
Victoria, British Columbia
V8R 6S4 Canada
604/479-4395

Washington Apple Pi, Ltd.
8227 Woodmont Ave. #201
Bethesda, MD 20814
301/654-8060

For information regarding
elementary and secondary
schools:

Apple Computer Clubs
P.O. Box 948
Lowell, MA 01853
617/452-9979

Reese Jones, an organizer of the University of California, Berkeley, Macintosh user group.



The other group with a national membership is the Washington, D.C., Apple Pi group, which began as an Apple II club and grew to include Macintosh owners. Its popularity stems largely from the discounts it provides on hardware and software. Although many user groups offer informal discounts at local retail stores, few have institutionalized discounting to the degree Apple Pi has. However, to prevent members from joining up solely to get discounts, Apple Pi makes new members wait 90 days before they can receive discounts on major purchases.

In addition to offering meetings, classes, public-domain software, a 60-page newsletter, special-interest groups, and even a hotline for questions, the group has two bulletin boards, one of which is used solely for buying and selling second-hand equipment.

Finally there is Club Mac, a Boulder, Colorado-based user group aiming at a national constituency. Club Mac is a new, rapidly growing group with ambitious plans. The club has no monthly meetings, but provides a variety of other services. Club Mac publishes an attractive newsletter filled with graphics generated on the Mac, rumors, and even highly critical (as well as highly laudatory) reviews. The group is setting up a bulletin board service, which is organized

along the lines of CompuServe's MAUG system (with ongoing messages and public-domain software) and devoted to the Macintosh. In addition, Club Mac offers a Mac hotline, some public-domain software, and a "Club Mac Roadshow." The Roadshow is planned to be a kind of traveling circus, which will tour most of the computer fairs and University Consortium campuses this coming year.

To Join or Not to Join?

So should you join a user group? Definitely, especially a local one. There's just no substitute for learning that a \$3.99 cable from Radio Shack can take the place of a \$40 custom cord, or for simply sharing your frustrations over *MacWrite*'s limitations with someone who knows whereof you speak.

To find a local group, check out the list accompanying this article, university bulletin boards, and International Apple Core (a service support group for Apple computer clubs). If no Mac user group exists in your area, ask a nearby computer retailer to sponsor one.

The national groups are wonderful resources if you happen to live where their meetings are held, or if you particularly need BCS's electronic mail system or Apple Pi's special discounts on hardware and software. Even if you can't attend meetings, there's strength in numbers. You might be the only lawyer in your local user group; in a national group, you're more likely to find other lawyers who share your interests. And of course, there's nothing to prevent you from joining a local and a national group if you want to reap the advantages of both. And if you join a group and don't like its focus or the way it is run, change it. Remember, user groups belong to the users. □

●●●●●●●●●● Jeffrey S. Young is a Contributing Editor of *Macworld* and a freelance journalist who has written for several national publications, including *Esquire*. He is the author of *Inside MacPaint*, forthcoming from Microsoft Press.

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Rev-Pack Carries Mac

Get all the features and utility of cases costing much more. These luxuriously finished cases are made by Rev-Pack, a leading manufacturer of soft, sturdy luggage. The outside covering is made of long-wearing and water-resistant Cordura. Outside pockets hold disks and manuals. Thick, high-density foam makes the case shock resistant. Inside the case, there is a keyboard pouch and a padded pocket, with separate mouse pouch, for accessories and cords. Other features include: heavy-duty, no-rust zippers; dual reinforced carrying handles, and adjustable

padded shoulder strap. Available in black or gold. Includes 1 year warranty. Price \$69.95.

Back up your Mac

The SB200 standby power supply system provides a steady flow of clean, regulated power. No need to worry over work being lost due to a power failure, surge or spike. The SB200 can power your Mac for up to 30 minutes after a power outage. Audio and visual alarms warn you that you are working on standby power. SB200 also provides protection against AC line noise and electromagnetic interference (EMI). Includes 1 year warranty. Price \$329.00. XT300 for hard disk equipped Mac's. Price \$429.00

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6. Padded, non-slip shoulder strap;
7. Velcro pouch for disks or accessories on side of case;
8. Zippered padded pouch for disk drive;
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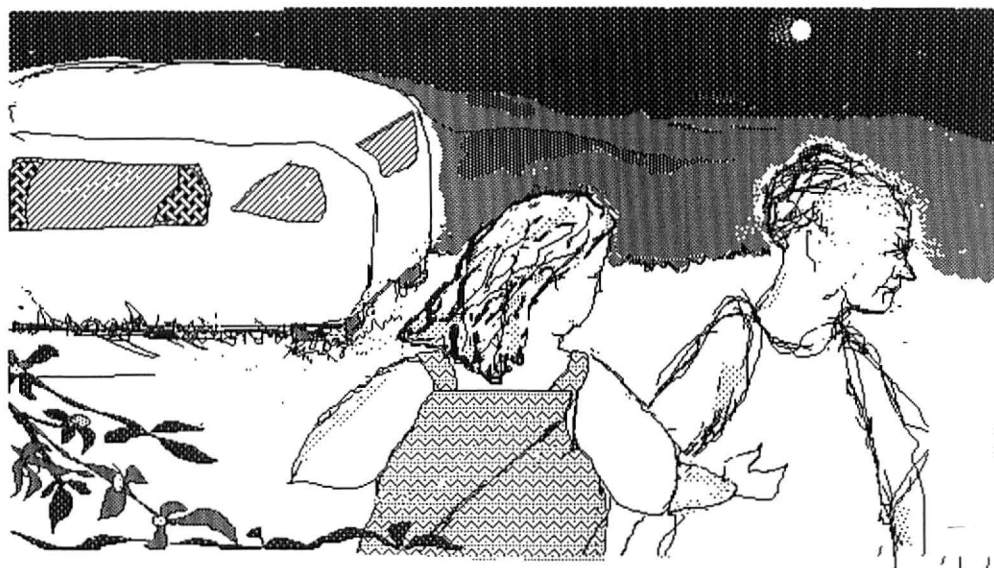
Macworld Gallery

An exhibition of Macintosh graphics

Edited by Erfert Nielson

OK, all you people out there in magazineland, your assignment this month is to draw an original picture—not a copy of a photograph or of a pen-and-ink drawing you did some time ago, but an original work of art—on the Macintosh. Once you get used to it, drawing on the Mac is relatively painless. In fact, features such as the Undo command, the Revert command, and the ability to copy and experiment with portions of a drawing make MacPaint a more versatile (or at least more forgiving) tool than most traditional drawing or painting media. Of course you can't lug your Mac around like a sketch pad, but perhaps this hindrance will encourage more people to use their imaginations as the basis for Macintosh graphics.

To be considered for exhibition in Macworld Gallery, send a paper copy of your drawing and a detailed description of how you created it to Macworld Gallery, 555 De Haro St., San Francisco, CA 94107. Please include your phone number. If your drawing is selected, we will ask for a copy of it on disk. All disks become the property of Macworld.



Nighttime

\$500—First Prize

Nighttime

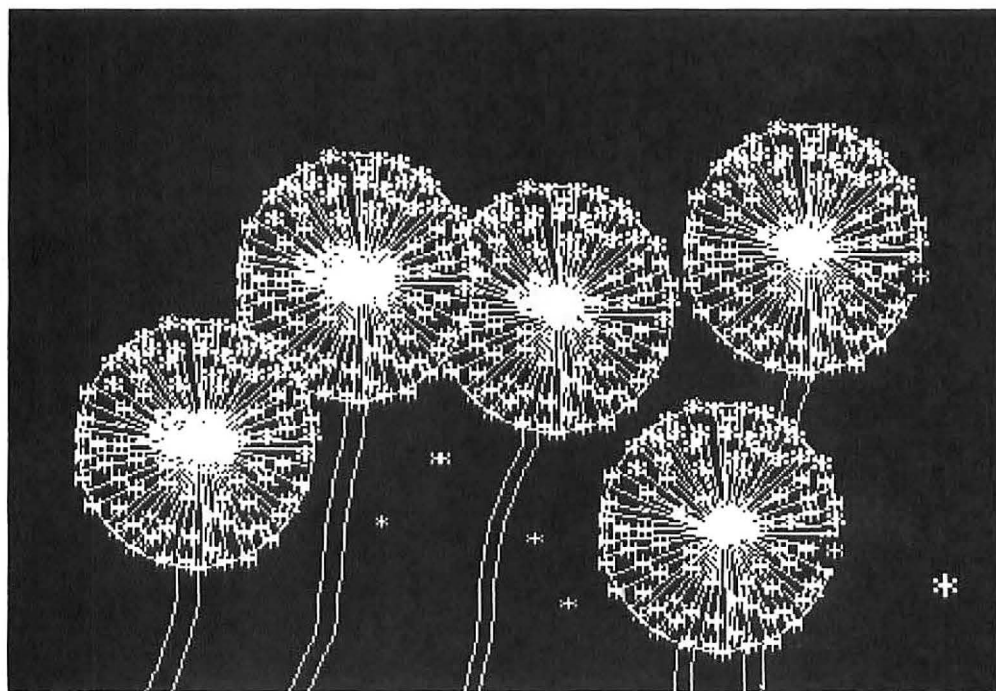
I don't have a Macintosh of my own, but I use the Mac at the office whenever I have a few spare moments. In this drawing I used several brush shapes and patterns; I drew the figures with the single-dot brush and painted the background with one of the larger brushes. I made the flowers in the foreground and the windows in the trailer with the solid free-form shape. I wanted the overall drawing to have a loose, sketchy look.

*Marian Treger
Oakland, California*

Dandelions

This drawing was very easy to create. I started by selecting the hollow oval tool and opening up a circle while holding down the Shift key. Then I selected the text option and typed an asterisk. I lassoed the asterisk, made several copies with the Option key, and dragged them into the circle. When I finished the first dandelion, I made four copies and moved them into position. Then I drew the stems with the pencil and reversed the drawing by double-clicking on the marquee to select the entire window and selecting Invert from the Edit menu.

*William Clark
Normal, Illinois*



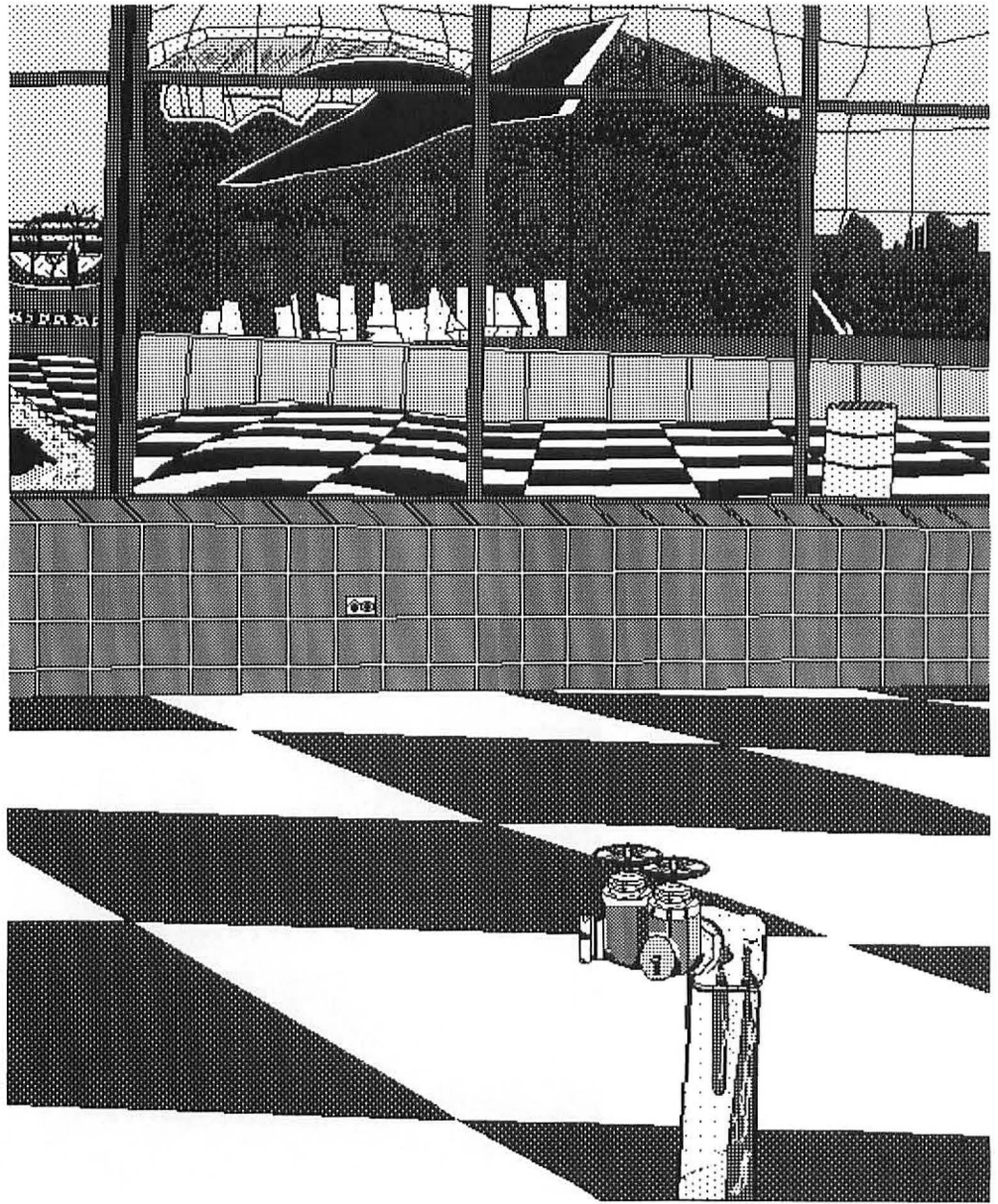
Dandelions

\$250—Second Prize

Reflections

I've had a Macintosh since April, and I find it an ideal graphics tool. I'm an amateur photographer, and I based this drawing on a photograph I took of a courtyard reflected in a series of mirrored windows. The principal tools I used were the straight line and the paint bucket. I found that the Revert command gave me room to experiment, since I could always return to the last version I'd saved if I didn't like the look of something.

*Philip L. Aldrete
Aurora, Colorado*



Reflections

\$250—Second Prize

Street Scene

This picture is the result of an experiment to keep the perspective intact in a detailed drawing that covered *MacPaint*'s full 8- by 10-inch working area. I accomplished this by drawing a grid on the screen that matched a grid on a sheet of plastic placed over a photograph. While drawing the woodwork on the buildings, I found that I could draw lines in various patterns with the straight-line tool by holding down the Option key. I used the spray can with several patterns to make the plants and lassoed and duplicated elements such as the tiles and the cobblestones.

Jerry Clement
Lafayette, California

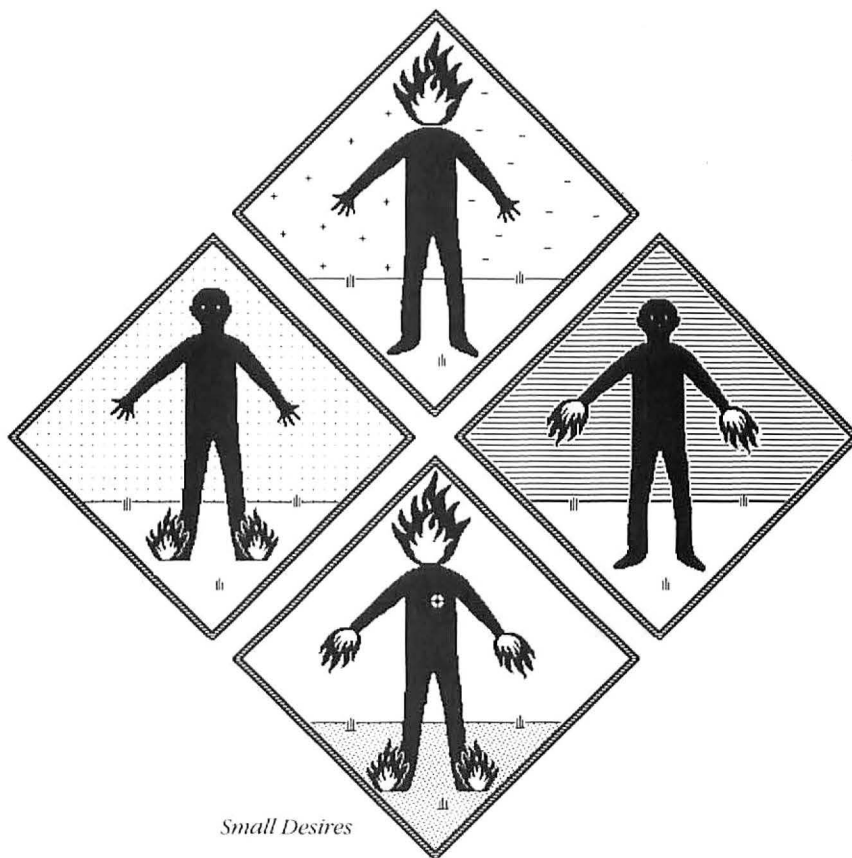


Street Scene

Small Desires

These half-baked signs of warming were constructed from three separately generated images: the small fires, the diamond, and our flaming friend. First I placed the figure in the diamond, then I attached the fires to various parts of his body. I altered background patterns and bodily details to complete the inflammatory message.

Eric Smith
Orlando, Florida



Small Desires

Old House

Until recently I was unable to muster any interest in computers. The Macintosh changed that, however. I used various *MacPaint* drawing tools, including the straight line, the oval, and the hollow rectangle, to draw the house. I drew the surrounding trees with the single-dot brush and the spray can. I found *MacPaint*'s ability to duplicate selected objects quite useful when I made the assorted railings in this picture.

Kevin S. Semon
Colorado Springs,
Colorado □



Old House

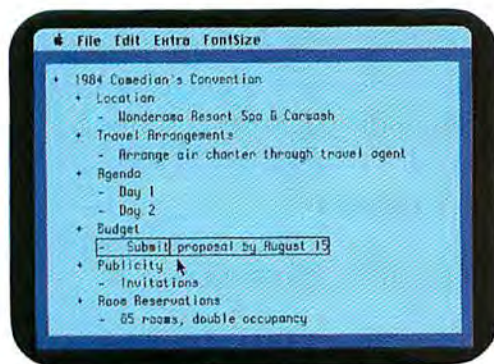
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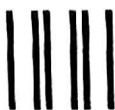
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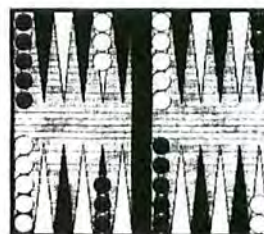
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MACWORLD

1984 Annual Index



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P = Premier
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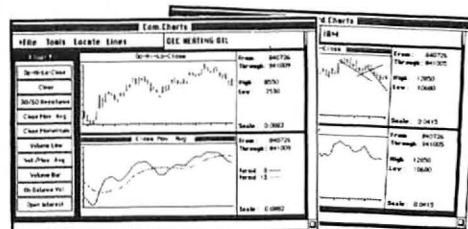
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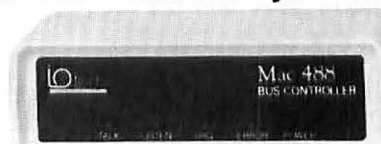
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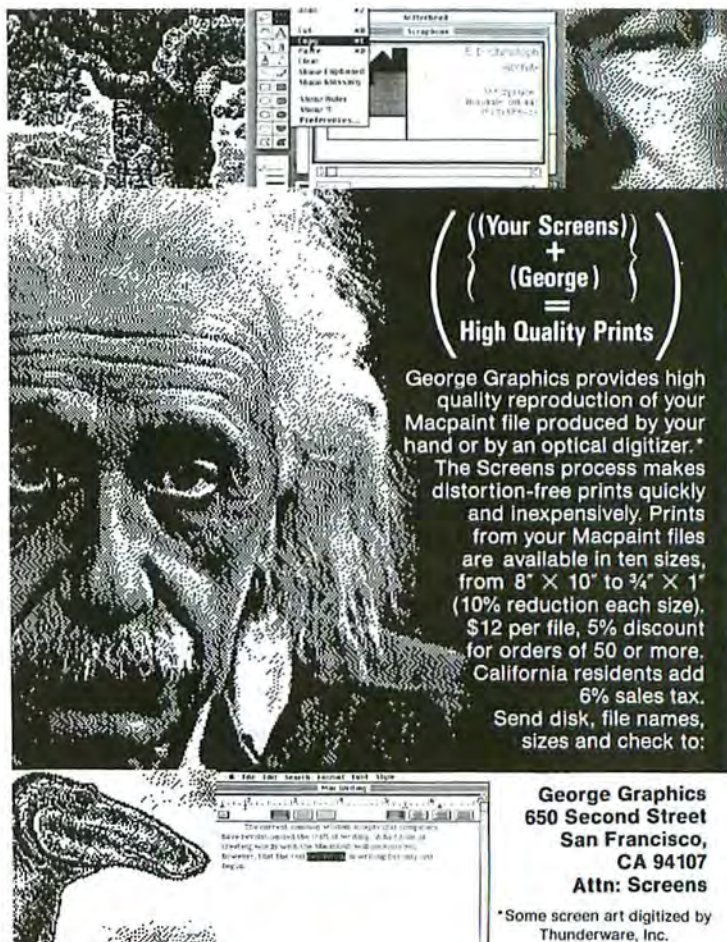
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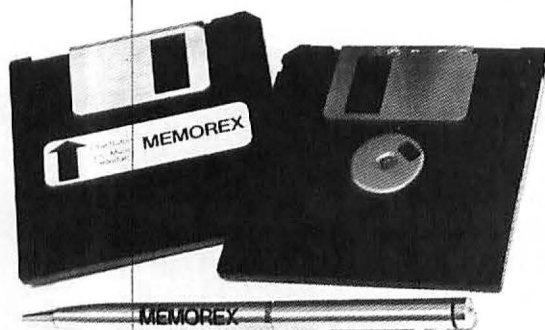
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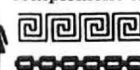
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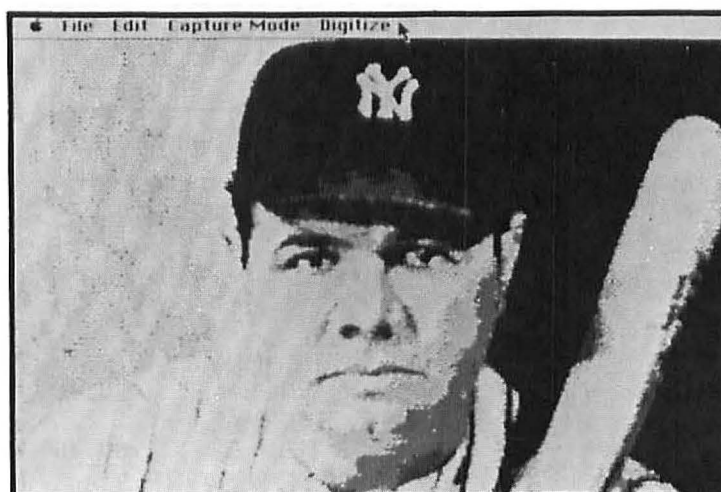
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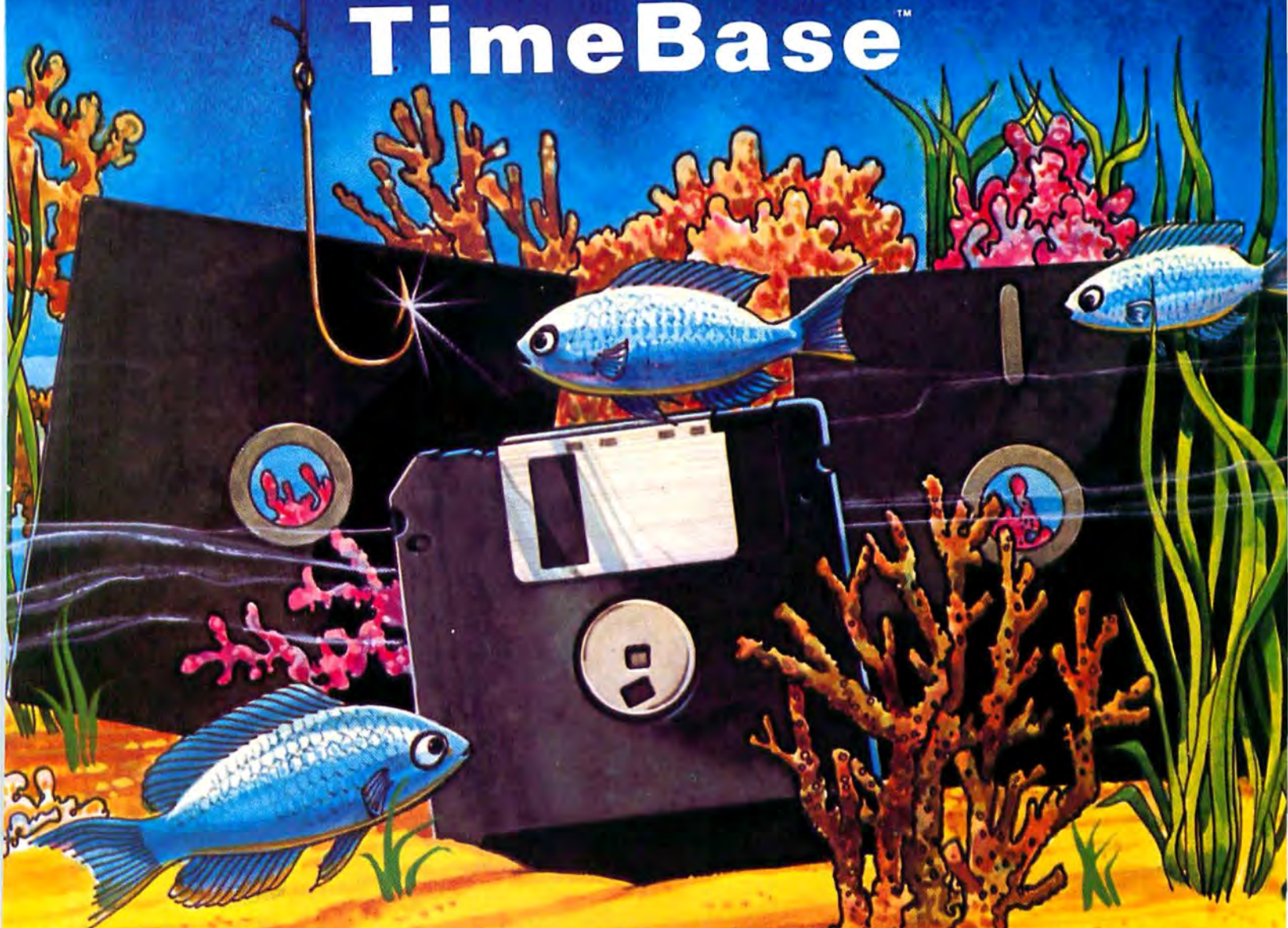
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